A. M. A.
ARCHIVES OF
DERMATOLOGY AND SYPHILOLOGY

EDITORIAL BOARD

PAUL A. O'LEARY, Chief Editor
102 Second Avenue S. W., Rochester, Minn.

HERBERT RATTNER, Associate Editor, Chicago

HAROLD N. COLE, Cleveland
FRED D. WEIDMAN, Philadelphia
H. E. MICHELSON, Minneapolis
A. C. CIPOLLARO, New York
J. LAMAR CALLAWAY, Durham, N. C.

RICHARD J. PLUNKETT, M.D., Chicago, Managing Editor

AUGUST 1951
VOLUME 64 NUMBER 2

Published Monthly by
AMERICAN MEDICAL ASSOCIATION
535 NORTH DEARBORN STREET • CHICAGO 10, ILLINOIS

Entered as Second Class Matter Oct. 30, 1917, at the Postoffice at Chicago, Under the Act of March 3, 1879. Annual Subscription, $12.00

WHEN LITTLE PATIENTS PUT ON A

Long face

You can end the fuss of getting oral penicillin into children simply by prescribing *Dulcet* Penicillin Tablets. These are the little cubes that look, smell and taste like candy. Youngsters take them like candy. But masked inside is the penicillin—50,000 or 100,000 units, depending on which of the two available strengths you specify—buffered with 0.25 Gm. calcium carbonate. And *Dulcet* Tablets have the same antibiotic power as equal unitage of penicillin in unflavored preparations. Try them on your next little patient—or finicky big one. *Dulcet* Penicillin Tablets, in bottles of 12 and 100, are available at pharmacies everywhere.

Abbott

Dulcet®

Penicillin

POTASSIUM TABLETS (BUFFERED)
(50,000 and 100,000 UNITS)

®Medicated Sugar Tablets, Abbott

"COLLOID BATHS constitute an essential part of external treatment for many acute and chronic dermatoses..."*

"... These baths are frequently depended on for their soothing, cleansing ... and therapeutic qualities."*

Aveeno colloid baths are recommended for efficacy and greater convenience in the non-specific treatment of eczematoid dermatitis, neurodermatitis, contact dermatitis, irritated and itching skin and generalized inflammatory skin conditions.

The soothing qualities of Aveeno colloid baths provide prolonged emollient action on the affected skin area, and control pruritus with a termination of scratching. Thus the alleviation of symptoms permits a more rapid return of natural healing processes.

In addition, Aveeno colloid baths because of their detergent action cleanse the skin without irritation or aggravation of the skin. Aveeno has a pH approximately that of normal skin (about 5.5) and its high buffering activity helps to maintain normal skin acidity.

Aveeno, *the new concentrate from pure oatmeal*, is non-toxic and non-irritating. Ready for immediate use and without further preparation, Aveeno is merely added to the warm bath water.

Samples, literature and patient instruction sheet pads sent on request.

E. FOUGERA & CO., INC. • *Sole Distributors* • *75 Varick St.* • *New York 13, N. Y.*

* "New type of Colloid Bath" by Kierland & Ede, Rochester, Minn., A.M.A. Archives of Dermatology & Syphilology, 63,4,502 April, 1951.

AVEENO®... *the new concentrate from oatmeal, instantly-ready-to-use.*

AVAILABLE IN DRUG STORES ONLY, IN 18 OZ. AND 5 LB. PACKAGES

Here's why you'll win lifelong gratitude whenever you recommend

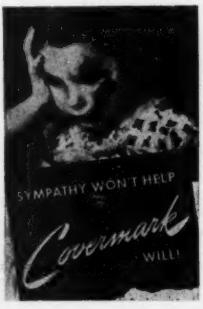
*Covermark**

Instantly and Completely Conceals Skin Blemishes

Guaranteed by Good Housekeeping

ACCEPTED FOR ADVERTISING IN PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION

A unique preparation, COVERMARK is highly recommended by hundreds of doctors and dermatologists for the concealment of permanent and temporary facial and skin disfigurations. Called a "modern miracle" by Reader's Digest, COVERMARK conceals *birthmarks, burns, scar tissue, vitiligo, broken veins* and *discoloration* around the eyes or on the body.

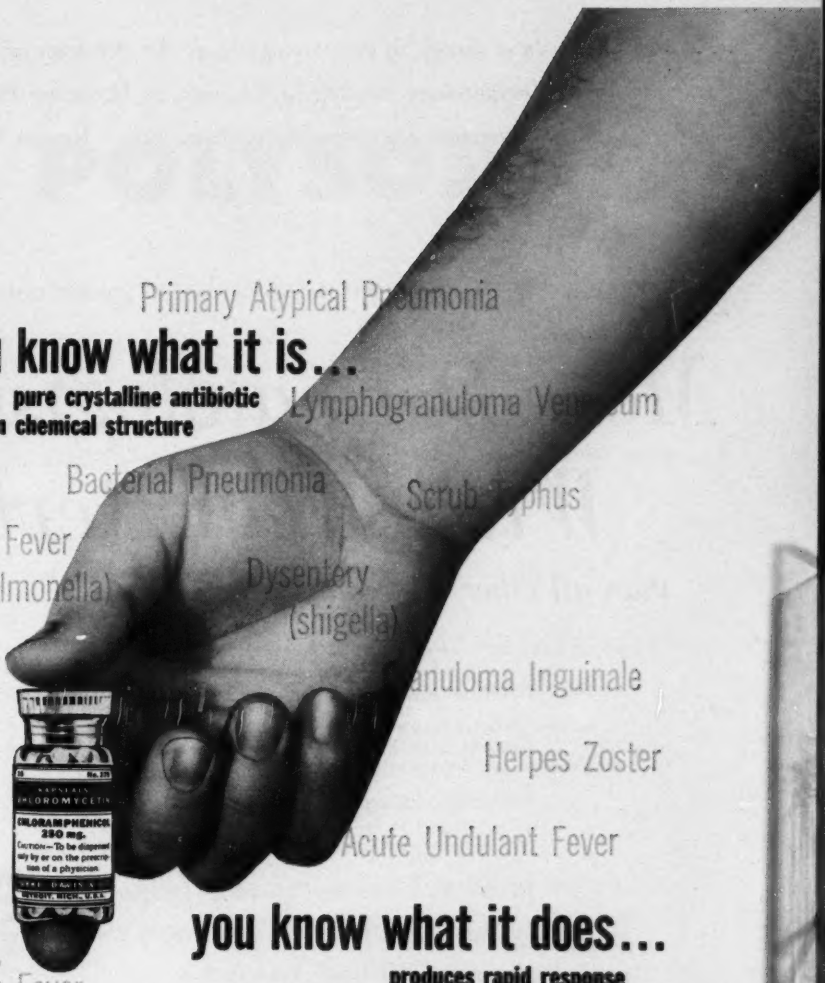


Easily and quickly applied, COVERMARK is regularly used by men with birthmarks, burns or other facial blemishes. Children, too, quickly learn to apply COVERMARK.

COVERMARK comes in 6 shades to match all complexion colorings.

Write for *free* illustrated professional booklet on COVERMARK

LYDIA O'LEARY INC. Dept. AM6
41 EAST 57th STREET, NEW YORK, N. Y.



you know what it is...

pure crystalline antibiotic of known chemical structure

you know what it does...

produces rapid response in a wide range of infectious diseases

Chloromycetin®

Chloramphenicol, Parke-Davis

Supplied in Kapseals® of 250 mg., and in capsules of 50 mg.

PARKE, DAVIS & COMPANY

MEDICAMENTA VERA

In a survey of dermatologists, at the Academy of Dermatology meeting in Chicago, in December 1950, 81.3% stated that members of their family used Revlon nail enamel.*

More Dermatologists' Wives Wear Revlon

than all other nail enamels combined!

Because nothing in all the world surpasses Revlon nail enamel—for fabulous color, fashion authority, lasting beauty... and superior quality.

Revlon is a true nail enamel. ***Acceptance by the Committee on Cosmetics of the American Medical Association*** *is recognition of Revlon's unsurpassed quality through laboratory-controlled production.*

Revlon Products Corp., 745 Fifth Ave., New York, N.Y.

**Complete survey results available on request.*

new

POLYSORB*

FOUGERA

an ointment vehicle of choice

- high hydrophilic properties—permitting the incorporation of copious amounts of medicated fluids.
- stable and compatible with all the commonly used dermatological agents.
- absence of sensitizing properties as established by clinical and animal investigation.
- freedom from skin irritation when tested on both normal and pathological skin.
- a complete base—nothing but the medication need be added.
- water miscible—readily washes off the skin and from the hair.

Polysorb, Fougera—sorbitan sesquioleate in a balanced wax petrolatum mixture** is a tailor-made ointment base designed to facilitate the pharmaceutical elegance and clinical efficacy of the extemporaneous ointment prescription.

Pharmacies everywhere are stocking Polysorb and awaiting your prescriptions. May they serve you.

E. FOUGERA & COMPANY, INC.
NEW YORK 13, N. Y.

1 Halpern, Alfred: The Hydrophilic Absorption Ointment Bases, J. Am. Pharm. Assn. XII, pg. 83 (Feb.) 1951.

2 Perrin, Samuel R.: Clinical Safety of Polysorb, Postgraduate Med. 8:485 (Dec.) 1950.

3 Perrin, Samuel R., and Halpern, Alfred: A Comparative Study of the Use of Hydrophilic Absorption Ointment Bases, J. Invest. Derm. 16:7 (Jan.) 1951.

4 Halpern, Alfred: An Evaluation of Polysorb, Am. Prof. Pharm. 16:340 (April) 1950.

* Trade Mark

** U. S. Patent No. 2,372,807

Cosmetic Aid in

ACNE THERAPY

Acne lesions frequently occur in those skin sites which cannot be hidden or covered by clothing. As a result, feelings of inferiority and serious psychologic complications may arise in the adolescent acne patient.

MARCELLE® FOUNDATION LOTION FOR OILY SKIN, for effective daytime therapy, affords the advantages of an astringent protective with cosmetic appeal. Entirely free from oils, fats or waxes, MARCELLE lotion is flesh-tinted to mask unsightly lesions and to help banish "complexion consciousness." MARCELLE Foundation Lotion for Oily Skin is also an excellent vehicle for the incorporation of such keratolytic agents as resorcinol and sulfur. Available in 2 oz. bottles in light, medium and dark skin-tints. Write for professional samples and physicians' formulary.

MARCELLE COSMETICS, INC.

1741 North Western Avenue, Dept. D • Chicago 47, Illinois

Marcelle®

FOUNDATION LOTION FOR OILY SKIN

• astringent • protective

• hypo-allergenic

in 3 skin-blending shades

SAFE COSMETICS Marcelle HYPO-ALLERGENIC COSMETICS ACCEPTED COMMITTEE ON COSMETICS AMERICAN MEDICAL ASSOCIATION **FOR SENSITIVE AND ALLERGIC SKINS**

in impetigo: With Terramycin "the results in impetigo and related skin diseases were splendid. Total recovery in about three days seemed to be the rule."

Translated from Perdrup, A.:
Ugeskrift for Laeger 112:1089 *(Aug. 3) 1950.*

CRYSTALLINE TERRAMYCIN HYDROCHLORIDE

available | *Capsules, Elixir, Oral Drops, Intravenous, Ophthalmic Ointment, Ophthalmic Solution.*

ANTIBIOTIC DIVISION Pfizer CHAS. PFIZER & CO., INC., *Brooklyn 6, N. Y.*

But my face never seems to *look* clean, Doctor!

Many women who exercise great care in applying their daily make-up, are much less careful about removing it at night. Sooner or later, their complexions show the result of such neglect. Perhaps some of these women have sought your advice and guidance concerning the proper cleansing of their skin and many have learned that a thorough twice-a-day cleansing with plenty of water and a mild soap is one of the firmest foundations upon which skin beauty can be based. Camay, The Soap of Beautiful Women, is a mild soap, perfectly suited for such beauty care. Mild Camay is so gentle and yet so thorough in its cleansing action. It has been tested under precise clinical conditions by a group of dermatologists who supervised tests consisting of regular cleansing with Camay on the complexions of over a hundred women. At the end of these tests, they found that changing to regular care with Camay was beneficial in almost all cases and concluded: *"Camay is really mild . . . it cleansed without irritation."*

Camay

The Soap of Beautiful Women

Samples of Camay are available for your personal or office use and for your observation. Just mail a post-card request to Procter & Gamble, Cincinnati 1, Ohio.

Beauty tonic recommended by a Specialist

You frequently recommend a change, doctor . . . and so do we! For there is nothing like a complete change in make-up to help a woman feel and look fresh and lovely. A trained Counselor will suggest a beauty treatment that your wife will enjoy . . . have a Beauty Counselor call on her at your own home.

With Beauty Counselor preparations, you *try before you buy.*

Prescription for Loveliness

Beauty Counselor hypo-allergenic skin-care and make-up preparations are kind to the most sensitive skins. We would like you to examine our qualitative formulas. Just have your office nurse mail the coupon.

Beauty Counselors

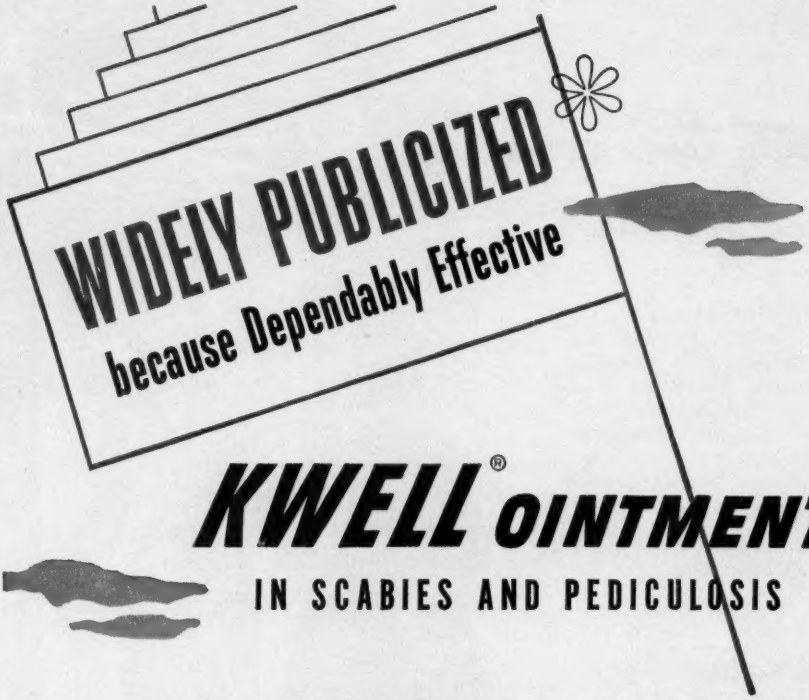
Grosse Pointe, Michigan
Windsor, Canada • London, England

Beauty Counselors, Inc.
17108 Mack Avenue
Grosse Pointe 24, Mich.
Please send your qualitative formulas to:

_____ M.D.

Address _____

City _____ Zone _____ State _____



KWELL® OINTMENT

IN SCABIES AND PEDICULOSIS

As a scabicide, Kwell Ointment leaves nothing to be desired. Its rate of cure is high—over 90%—on a single application. It is non-irritant and does not leave a contact dermatitis in its wake. It is clean—greaseless and pleasantly scented—and does not stain clothing or bed linen. It may be used in the presence of secondary infection without fear of undesirable side actions. It is usually effective when other scabicides fail.

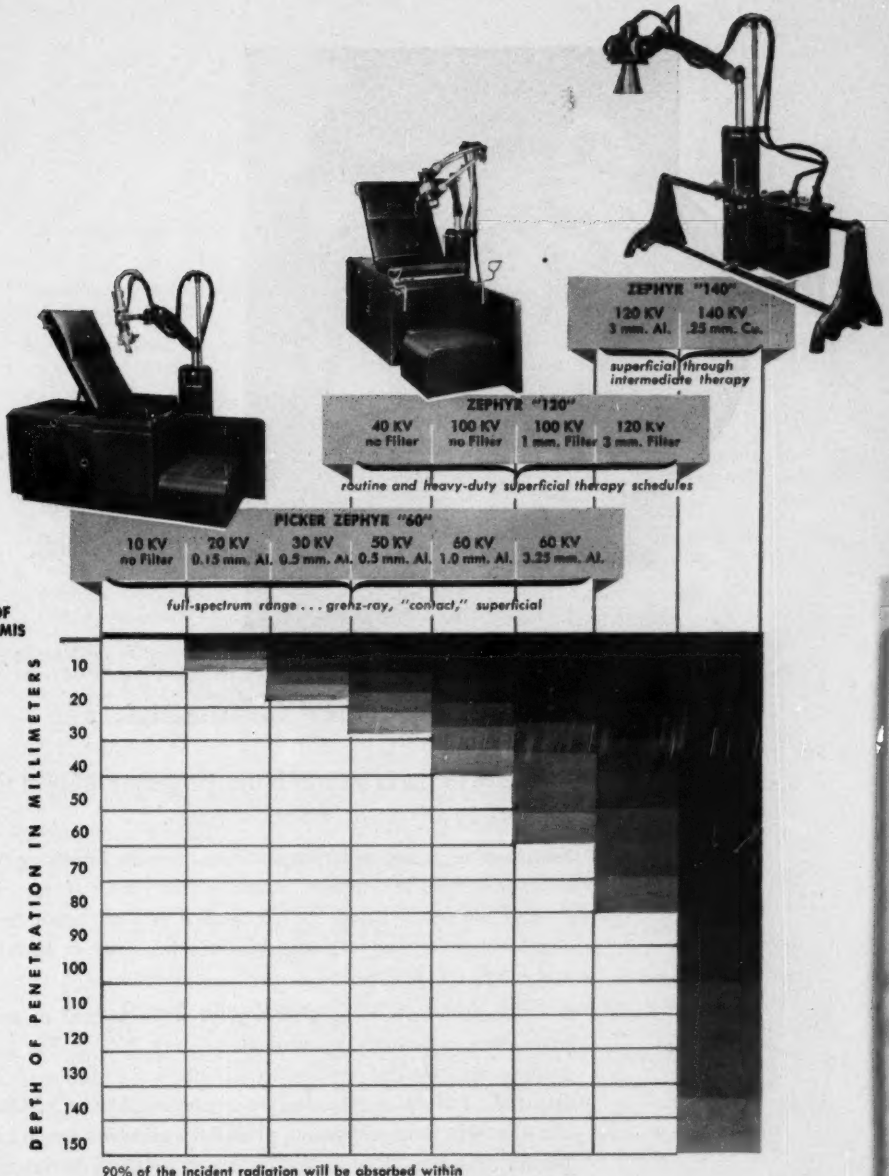
As a pediculicide, Kwell Ointment performs equally well. It is promptly destructive for every type of louse which infests the human body.

Kwell Ointment contains 1 per cent of the gamma isomer of benzene hexachloride in a vanishing cream base. Its active ingredient is highly lethal for the Sarcoptes scabiei and pediculi, but in the concentration employed is non-toxic for man. Kwell Ointment is available on prescription in 2 oz. and 1 pound jars. The former is usually adequate for one patient.

***REFERENCES**

1. Wooldridge, W. E.: J. Invest. Dermat. 10:363 (May) 1948.
2. Wooldridge, W. E.: Personal Communication.
3. Niedelman, M. L.: J. Pediat. 32:566 (May) 1948.
4. Cannon, A. B., and McRae, M. E.: J.A.M.A. 138:557 (Oct. 23) 1948.
5. Appel, B.: New England J. Med. 243:74 (July 20) 1950.

C.S.C. Pharmaceuticals A DIVISION OF
COMMERCIAL SOLVENTS CORPORATION, 17 E. 42ND STREET, NEW YORK 17, N. Y.



90% of the incident radiation will be absorbed within the shaded areas shown. All values are approximate and should not be used as a guide for treatment.

the Picker "Zephyrs"... right for every kind of superficial or intermediate x-ray therapy application.

Picker x-ray

in inflamed dermatoses,

a new rule for *gentler* cleansing...

"Preserve the 'acid mantle' by avoiding the raising of the skin pH by any agent, especially soaps."[1]

Soap may aggravate or perpetuate dermatoses by impairing the skin's protective 'acid mantle.' Alkali and fatty acids of soap can damage the diseased skin; the allergens of soap can sensitize it. Keratolysis following soap may facilitate the entry of bacteria and fungi.

For safer, more thorough cleansing, prescribe instead of soap pHisoderm, a modern dermatologic adjunct. Nonalkaline and soapless, the pH value of pHisoderm is identical with that of the skin (5.5) and assures preservation of normal physiology. More effective in its detergent power, pHisoderm allows thorough and gentler cleansing of the dermatitic skin in inflamed dermatoses.

1. Stokes, J. G.: **GP**, 2:33, Aug., 1950.

pHisoderm®

Winthrop-Stearns INC. • NEW YORK 18, N. Y. • WINDSOR, ONT.

CONTENTS

PAGE

Cutaneous Medicine in the Medical Curriculum. U. J. WILE, M.D., ANN ARBOR, MICH. 119

Incontinentia Pigmenti: A Report of Five Cases and Review of the Literature. ROBERT G. CARNEY, M.D., IOWA CITY 126

Psychocutaneous Aspects of Persistent Pruritus and Excessive Excoriation. PHILIP F. DURHAM SEITZ, M.D., INDIANAPOLIS 136

Effects of Podophyllum on Basal-Cell Epitheliomas. CHARLES F. SIMS, M.D., NEW YORK, AND NATHAN PENSKY, M.D., BROOKLYN 142

Squamous-Cell Epithelioma That Simulates Sarcoma. LAURENCE J. UNDERWOOD, M.D.; HAMILTON MONTGOMERY, M.D., AND ALBERT C. BRODERS, M.D., ROCHESTER, MINN. 149

Pyogenic Infections of Skin: Etiologic Factor in Acute Glomerulonephritis of Children. J. LAMAR CALLAWAY, M.D., AND HARRY B. O'REAR, M.D., AUGUSTA, GA.. 159

Treatment of Vesiculoerosive Stomatitis with Aureomycin Troches. ALEXANDER A. FISHER, M.D., AND MORRIS LEIDER, M.D., NEW YORK 164

Penicillin in the Treatment of Experimental Syphilis of Rabbits: VII. Penicillin "S-R" and Procaine Penicillin G in Peanut Oil with Aluminum Monostearate, Alone and in Combination with Oxophenarsine Hydrochloride (Mapharsen®) or Bismuth Subsalicylate. JOHN A. KOLMER, M.D., WITH THE TECHNICAL ASSISTANCE OF ANNA M. RULE, PHILADELPHIA 169

Pigmented Purpuric Eruptions. SAMUEL J. RANDALL, M.D.; ROBERT R. KIERLAND, M.D., AND HAMILTON MONTGOMERY, M.D., ROCHESTER, MINN 177

CLINICAL NOTES:

Generalized Herpes Zoster, Encephalitis and Lymphatic Leukemia: A Case Report. LAWRENCE FRANK, M.D., BROOKLYN 192

Tinea Barbae of the Kerion Type Produced by Trichophyton Purpureum: Report of a Case. KURT LOEWENTHAL, M.D., FREEPORT, N. Y., AND ROBERT L. REIN, M.D., BROOKLYN 194

Case of Pemphigus Treated with ACTH. ALBERT RUBIN, M.D., HARTFORD, CONN. 196

Fixed Drug Eruption and Epididymitis Due to Antipyrine. HUGH MCCULLOCH, M.D., AND I. ZELIGMAN, M.D., D.MED.SCI., BALTIMORE 198

Palmar Psoriasis. M. H. SAMITZ, M.D., AND J. J. ALBOM, M.D., PHILADELPHIA... 199

Alopecia Areata Occurring in Two Brothers and Two Sisters. EUGENE S. BERESTON, M.D., AND HARRY M. ROBINSON JR., M.D., BALTIMORE 204

Simultaneous Condylomata Acuminata and Condylomata Lata: Report of a Case. HELEN TAYLOR DEXTER, M.D., AND EVELYN M. ROCKWELL, M.D., CINCINNATI 205

Chlorcyclizine Hydrochloride Ointment in Pruritic Dermatoses. SAMUEL AYRES III, M.D., AND SAMUEL AYRES JR., M.D., LOS ANGELES 207

Solitary Molluscum Contagiosum in Adults. NORMAN TOBIAS, M.D., ST. LOUIS... 208

Eczematous Reactions to Kwell® (Gamma Benzene Hexachloride). A. J. REICHES, M.D., ST. LOUIS 209

(Continued on Next Page)

CONTENTS—Continued

CLINICAL NOTES—Continued

Medical Tattooing: An Easily Constructed Electric Machine. Otto E. L. Schmidt, M.D., San Mateo, Calif. ... 210

Treatment of Superficial Pyodermas in Children. Richard E. Strauss, M.D., and G. Douglas Baldridge, M.D., Philadelphia ... 211

Treatment of Pyogenic Dermatoses with Topical Chloramphenicol (Chloromycetin®). Ben A. Newman, M.D., and Fred F. Feldman, M.D., Los Angeles. 212

Treatment of Recurrent Pustular Eruptions ("Pustular Psoriasis") with Cortisone. Max Wolf, M.D., and Gordon C. Sauer, M.D., New York ... 214

Lupus Erythematosus Following Burns from Hydrochloric Acid: Report of a Case. Gerald A. Spencer, M.D., New York ... 215

Skin Eruption Due to Chloramphenicol (Chloromycetin®). Harold E. Usndek, M.D.; William P. Curtiss, M.D., and Edwin J. Neill, M.D., Detroit ... 217

SOCIETY TRANSACTIONS:

New York Academy of Medicine, Section of Dermatology and Syphilis ... 218

Pacific Dermatologic Association ... 224

Brooklyn Dermatological Society ... 232

Cleveland Dermatological Society ... 233

Philadelphia Dermatological Society ... 238

Bronx Dermatological Society ... 238

Chicago Dermatological Society ... 247

NEWS AND COMMENT ... 252

BOOK REVIEWS ... 254

A. M. A.
Archives of Dermatology and Syphilology

VOLUME 64 AUGUST 1951 NUMBER 2

COPYRIGHT, 1951, BY THE AMERICAN MEDICAL ASSOCIATION

CUTANEOUS MEDICINE IN THE MEDICAL CURRICULUM

U. J. WILE, M.D.*
ANN ARBOR, MICH.

SIGMUND Pollitzer, whom we are honoring today, was far better prepared than most of his contemporaries in his premedical training to achieve distinction in his chosen field. Let us glance for a moment at his college and postgraduate career. At the City College, from which he was graduated with honors in 1879, he did special work in physics, mathematics, and astronomy.

In 1882 he received a master's degree, and in 1884 he was graduated in medicine from the College of Physicians and Surgeons. His graduation thesis was an original investigation on "Temperature Sense," which was published in the *British Journal of Physiology*.

We next find him in Heidelberg doing further research in physiology, the results of which were two papers published in *Pflügge's Archiv*. In 1885 he studied bacteriology in Fresenius's laboratory, and in the same year he began his studies in pathology in Virchow's laboratory in Berlin, occupying himself simultaneously in the study of general medicine.

From Berlin he traveled to Vienna, where for several months he continued his work in internal medicine.

On his return to this country, he practiced medicine for three years in New York city, and in 1889 he returned to Europe, where he began his studies of dermatology at the Unna Clinic in Hamburg. His contemporary fellow students in the Unna Clinic were Török, Philippson, Mibelli, Thomasoli, and Santi, all of whom achieved national distinction. Of Unna's many pupils, Pollitzer was always regarded by the old master as the outstanding one.

It cannot be said that Pollitzer remained an adherent of any one school. A critical student of the English, French, Austrian, and German dermatologic schools, he absorbed the soundest ideas of each, and evolved therefrom a scientific and clinical credo of his own.

Most of Pollitzer's contemporaries and those following at least for three decades thereafter had to seek, as he did, for their graduate instruction in foreign universities, at a considerable monetary outlay involving in many instances great financial sacrifice. The reasons for this situation are obvious. American university medical schools were in no way equipped to furnish graduate instruction either in special or in general fields of medicine and surgery.

*Professor Emeritus, Department of Dermatology and Syphilology, University of Michigan Medical School.

This paper is the First Sigmund Pollitzer Lecture, delivered at the New York University Post-Graduate Medical School of the New York University-Bellevue Medical Center, on Oct. 5, 1950.

Returning to this country these pioneers labored diligently to install adequate undergraduate instruction in their special fields under the most adverse conditions.

In the continental European universities all the specialties were represented in the medical faculties with full professors as departmental heads. The departments had autonomy, adequate budgets, laboratory facilities for investigation, and full-time assistants.

In this country until recent years cutaneous medicine and syphilology for the most part were taught to undergraduates in dispensaries and outpatient departments. There were few, if any, hospital beds available, and the departmental head conducted his course on his own time and with no remuneration. Such assistants as were available were usually self-sacrificing volunteers, more often than not men in general practice, who hoped at some time to limit their efforts as specialists. Less often there were qualified specialists who gratuitously gave a few hours each week to dispensary practice and assisted in clinical teaching. Laboratories, opportunities for research, and hospital facilities for bedside instruction were available in these times only for general medicine, surgery, obstetrics, and, in rare instances, the surgical specialties.

As professor of dermatology at the New York Post-Graduate Medical School and Hospital from 1895 to 1915, Sigmund Pollitzer struggled manfully to overcome these shortcomings. He was an incisive and convincing teacher whose influence is still felt among many of his students, who in their turn, under far more advantageous conditions, have instilled his precepts in their teaching.

During the first three decades of the present century, greater opportunities for undergraduate and graduate instruction were introduced into our university medical schools, so that, by now, in many instances these schools equal the best that continental European schools could offer. And, indeed, it is no longer necessary for interested physicians to seek foreign training in any of the special or general fields of medicine.

The factors which have contributed to the increasing importance of dermatologic teaching are manifold. The first and second global wars demonstrated the enormous loss of efficiency of troops, particularly those serving in the tropics, because of cutaneous diseases of many sorts and the venereal diseases. Included in the many hazards of factory work, conditions affecting the skin and impairing the worker's usefulness play a large part in the new and important field of industrial medicine. The remarkable discoveries concerning the allergies and their specific relation to systemic and local disease all have contributed to the increasing importance of cutaneous medicine.

It is perhaps appropriate now to appraise the present place of cutaneous medicine in the medical-school curriculums of our universities, with regard to needs and limitations and the opportunities furnished for undergraduate, graduate, and postgraduate instruction.

Obviously there can be no absolute uniformity in the number of teaching hours allotted to dermatology and syphilology, since these are subject to variation in accordance with local conditions, the quantity and quality of teaching material, clinical and laboratory facilities, and the availability of assistants. To a great extent also the teaching schedules depend upon the persuasiveness of the individual teacher in securing the necessary sympathy and support of his dean and from his faculty.

Success in meeting the students' requirements is also a factor of some importance. A qualified clinician interested also in research finds it easier to acquire additional hours of teaching if at the same time he is a convincing and interesting teacher.

There are certain fundamental requirements, however, which would seem to be necessary so that the special field of cutaneous medicine may be taught in a fashion adequate to equip the graduate in medicine to recognize and treat the ordinary diseases of the skin with intelligence. Without these fundamental requirements there can be no real success in a teaching program.

Of first importance I should consider the independence of the department as a separate entity in the faculty and full professorial rank for its director. Whether the director serves on a full-time or on a part-time basis is, of course, in accordance with the policy of the individual school. Where a part-time arrangement is the school policy for medical specialists, there should be a salary sufficiently attractive to enable the incumbent to devote the largest part of his time to his teaching obligations and to investigation.

The qualifications of the incumbent should include a good background in biology, physics, biochemistry, and physiology, and his usefulness as a teacher would be greatly enhanced if he had served a few years' apprenticeship in internal medicine. He should above all things be a convincing and imaginative teacher, a qualification not necessarily inherent but not too difficult of achievement through practice.

Under satisfactory conditions there should be a staff which should include at least one assistant or associate professor on the same full- or part-time basis and a rotating service of interns, assistant residents, residents, and instructors on a full-time basis. Physical facilities should include research laboratories and pathologic and myologic units, with such technical assistants as are necessary to staff them.

All of this, of course, means a substantial budget, without which no department can operate with maximum success.

I am not familiar with the budgets upon which the several well-organized departments throughout the country operate. I am sure that there is a very large discrepancy between those operating on the largest budgets and those doing adequate teaching and investigation on relatively small sums. I may be pardoned if I discuss budgets from personal experience at the University of Michigan. When I left my association with Sigmund Pollitzer in 1912 to enter the faculty of which I am now emeritus, I found supporting my efforts a total of $4,265.00. This sum included my salary, a sum of $285.00 for equipment, and a small salary for an instructor. At that time the medical school budget, for salaries for 72 on the payroll and including all other expendable sums for equipment and laboratories, amounted roughly to $105,000. At the present writing our medical school, with a teaching staff of 264 of all grades, carries a budget of $1,143,400. The sum from the university allotted to the Department of Dermatology and Syphilology for salaries and running expenses is $35,200. In addition, there are substantial funds from outside sources, including the United States Public Health Service, the American Cancer Society, and two private endowment funds, amounting to almost $20,000, giving the department an annual total expendable sum of slightly over $55,000.

These funds maintain a staff of two interns, four assistant residents, six residents, five instructors, two assistant professors, and the departmental head.

Part of the salaries of those in the lower echelons—i. e., of the interns, two of the assistant residents, and two residents—is paid by an additional $8,000 from the budget of the University Hospital.

It is my understanding that substantial budgets for dermatology and syphilology are available at the Mayo Clinic, which limits itself to graduate instruction; at the University of Pennsylvania, and at Harvard, Duke, Chicago, Virginia, and, I believe, some other university medical schools. I am equally sure that there are more departments of dermatology and syphilology with either no budgetary support or an entirely inadequate one. It must be admitted further that some of our colleagues are doing adequate teaching and such investigation as can be carried out without paid laboratory assistants. Obviously, however, they are working under a distinct disadvantage, and, if their results are good, it is evident that their ability to attract graduate students and to produce a high type of investigation would be greatly enhanced with funds available for their efforts. A few of our better-known medical schools have given neither autonomy to the departments of dermatology and syphilology nor any financial support to the responsible teaching staffs. In these schools there is no graduate instruction and the undergraduate teaching is notoriously poor.

The standards of clinical teaching now seem to be following a uniform pattern upon which all teachers agree—for undergraduate and graduate classes, bedside instruction in small groups, supervised outpatient contacts likewise in small groups, attendance upon seminars and conferences, and the reduction of formal lectures to a minimum.

The number of hours allotted to dermatology and syphilology for undergraduate students differs widely in those institutions in which a good teaching program has been developed. The University of Illinois devotes 70 hr. per student; Washington University, 102 hr.; the University of Oregon, 71 hr.; Columbia University, 36 hr. plus 60 hr. of electives; the University of Chicago, 124 hr.; the State University of Iowa, 58 hr.; the University of Michigan, 134 hr., and the University of Pittsburgh, 59 hr. All the above-mentioned universities' medical schools have autonomous departments, headed by a director with full professorial rank, and all have teaching hospital beds and adequate laboratory facilities. Wholly adequate budgets plus endowments, however, are limited to only a few of these schools.

For graduate students who are preparing to enter the field as specialists, a period of study of three full years following a rotating internship seems to be the definite minimum, since this length of time is required for certification by the American Board. An ideal program of graduate teaching would seem to include having the first year following internship spent by the student on the wards, in charge of patients. In our own institution we consider the incumbent of this year an assistant resident. This first year should be followed by a year during which the graduate student serves as a resident, engaged in outpatient work and taking specified courses in pathology, mycology, and X-ray and radium therapy technique. Three months of this year on full time or six months on half time should be spent at the student health service, caring for the dermatologic conditions occurring in the University student group. A desirable addition, if time permitted, would be a few weeks spent full time in the department of allergy and a few days in the serology laboratory.

In a well-balanced medical curriculum there should be occasional interdepartmental conferences at which all undergraduate and graduate students of the departments concerned should be present. In some institutions such meetings occur on a monthly basis, and the profit derived therefrom not only creates an excellent liaison between large groups devoted to the same ends but also serves to bring each particular field into its proper relationship to the others.

The third and last year should find the graduate staff members sufficiently well informed to participate in the undergraduate instruction. Thus they might properly be called instructors. In several institutions these men now act as chiefs of outpatient clinics. During this final year of study such as are qualified should undertake either an independent original investigation or participate in one under way. Satisfactory independent investigation or participation in such could then lead, upon the recommendaton of the department head, to a master's degree. The Mayo Foundation, University of Minnesota, so far as I know, is the only institution in the country which offers a degree of doctor of philosophy in dermatology and syphilology.

Where institutions are properly budgeted for three years of full-time service on the part of graduate students, the incumbents should receive a sliding scale of salaries. These salaries are, so far as I know, never an actual living wage, but, such as they are, they enable the graduate student to get along without too great a financial sacrifice. At the University of Michigan these salaries are $1,350, $1,675, and $1,900, respectively. An additional year on a volunteer basis should be open to graduate students, particularly to those of exceptional ability. This type of graduate course, with variations in stipend and differences in time devoted to ward, outpatient service, and laboratory, is available in all the better-organized departments of our medical schools.

A further function of a well-organized teaching clinic is an intensively developed postgraduate teaching program. Many of our medical schools, realizing that the physician's instruction in medicine should not stop after his graduation, have created special departments of so-called postgraduate medicine. Such divisions have their own head and an independent budget, and they function by organizing refresher courses, both at the medical school and at the hospital, and also by giving systematic instruction carried on by teams which travel throughout their states to keep medical practitioners advised of the recent advances in treatment and diagnosis in all the various fields of medicine and surgery. In such postgraduate courses the dermatosyphilologist contributes his share.

The question may well be asked: How, in the crowded curriculum of the present medical course, can time be found to expand the minor specialties to the proportions outlined above? The advances in dermatosyphilology which warrant emphasis in undergraduate and postgraduate education have been paralleled in pediatrics and neuropsychiatry—in fact, all the special fields have become increasingly important with the scientific advances of the past half century. With so much more for the student to learn than heretofore, there has been no increase in the total number of teaching hours in the four-year curriculum.

Much has been accomplished by a readjustment of the hours in the preclinical years. In the past there was overemphasis and too much time spent on study of some of the basic sciences. In some schools more time was and still is devoted to

anatomy, its study spreading over two years and requiring of the student more hours than were devoted to general medicine.

Medical educators have recently felt that clinical teaching, instead of beginning, as was customary, in the third year, should begin for the medical student in his first year, with an increasing number of hours for clinical teaching in the second year. Such an adjustment not only varies the monotony of continuous reading and long laboratory hours, but also has resulted in a sensible readjustment of the hours devoted to the basic sciences and in the substitution for a rigid curriculum of a flexible and more interesting one. Without loss of actual hours, elective courses in the preclinical and clinical years have made available courses for which there was no time in the rigid curriculum of the past.

In any well-organized teaching group there must be the closest liaison and cooperation between the internist and all the departments of specialized medicine. In this respect a professor of medicine should be in close proximity to his colleagues specializing in X rays, cardiology, and endocrinology, for example, and all departments should be so closely integrated that referrals from one to the other could be seen with a minimum loss of time. Such close association leads to an excellent *esprit de corps* and to frequent interdepartmental conferences and seminars, from which all concerned are materially benefited and educated.

Let us now consider the place and importance of syphilology in the medical curriculum. The amazing advances in the treatment of infectious syphilis have so drastically reduced the number of infections that in certain sections of the country it has become difficult to find proper cases for teaching purposes. It is also true that the remote effects of syphilitic infections as they pertain to the cardiovascular and central nervous systems have shown a decided drop in incidence. The infection, to effect a cure of which in the past took months and even years, can now apparently be eradicated from the system in a matter of days—a tremendous saving in time, money, and efficiency for the infected person. A paradoxical phase of this extraordinary therapeutic advance is that recovery is so rapid that no immunity seems to be established. In the pre-antibiotic period reinfection was so exceptional that many with wide experience had never seen a proved second case of syphilitic infection.

At the present writing reinfections are so frequent that they are now hardly reportable. Together with this situation there has come a more indifferent attitude than previously existed on the part of those accustomed to expose themselves.

I do not subscribe to the optimistic view that we have conquered this insidious disease or to the contention that there will soon be no place in the field of medicine for the trained syphilologist. Venereal disease in all of its patterns follows closely upon social upheavals, in war and with poverty and economic distress. Under such abnormal conditions it is my opinion that a recrudescence in the incidence of syphilis may be predicted. Past history, I think, will bear out this statement.

Difficult as the immediate problem of obtaining teaching material may be, syphilis in all of its manifestations should be taught to the medical student, precisely as we still teach all that is known of typhoid, of diphtheria, and of smallpox, all infections more definitely controlled than is syphilis, and with regard to none of which are raised questions of conduct, restraint, and morality factors. These dis-

eases are still very properly taught, although a medical student may well go through his whole course of study without ever having a case demonstrated to him.

I share the enthusiasm for modern syphilitic treatment methods and the great satisfaction in the resulting lower incidence and the lessening of human misery such as was caused by syphilis in the past. I do not share the optimism that we are approaching eradication of the disease, and I further believe that, if global conflict, followed by inevitable economic distress and poverty, occurs, we may expect a reactivation of the spirochetal disease. If this reactivation takes place—and history bears out the premise—let us include in our medical curriculums for undergraduate medical students the course in syphilis heretofore given.

For graduate students intending to become specialists in cutaneous medicine, the need for instruction in syphilology is more obvious and insistent. No man can become an expert diagnostician of the multifarious cutaneous lesions who is unfamiliar with the simulation of them which is characteristic of the various syphilids. So also must the various syphilitic neuropathies, arthropathies, and visceral conditions be learned about, so that they may be differentiated from simulated changes in the various systems affected which are due to entirely different causes.

Sigmund Pollitzer practiced his special field of medicine for 47 years. His premedical background and his postgraduate medical training were such as would have equipped him well were he embarking on his distinguished career today. If he were with us now, he would find an abiding satisfaction in the realization that his teaching, his diagnostic ability, and his scientific intellectual integrity have had a far-reaching influence among his younger colleagues. Many of these in their turn are conveying his scientific approach to medical problems to their students.

He would be especially happy could he know that his own chair is now integrated into one of the great metropolitan universities and that its present incumbent is so well qualified as a teacher, investigator, and practitioner to carry on in the manner that he, Pollitzer, would wish.

INCONTINENTIA PIGMENTI

A Report of Five Cases and Review of the Literature

ROBERT G. CARNEY, M.D.
IOWA CITY

INCONTINENTIA pigmenti is a peculiar skin disease, probably developmental in origin, characterized by an extremely striking and bizarre arrangement of pigmented macules in polyangular flecks, whorls, spidery forms, lines, and patches. These chocolate-brown designs do not follow lines of cleavage or distributions of nerves, nor do they respect the limitations of the midline. Areas of alopecia in the scalp appear frequently, and many other ectodermal and mesodermal defects occur, although they are less well known.

One feature of this odd cutaneous anomaly has only been touched on in the literature, and yet it is perhaps the most peculiar aspect of the disease: the pigmentary anomaly is frequently heralded by inflammatory lesions, particularly bullae, in lines and patches. The bullae disappear and recur for weeks or months and then finally give way, either to the pigmented macules directly or to an intermediate temporary stage of linear verrucous lesions which gradually fade out, leaving the typical end picture of incontinentia pigmenti. The bullous phase is so characteristic that a prediction of incontinentia pigmenti can be made at that time.

An exhaustive search of the literature on pigmentation and nevi failed to reveal any report of this anomaly under any title prior to 1925, when Bardach,[1] with a diagnosis of systematized nevi, presented two cases in identical twins. In 1926 Bloch [2] presented a third case, under the now-accepted name of incontinentia pigmenti, and Sulzberger [3] reported further on this case in 1928. Up to the present time 30 cases have been presented in the literature and before dermatological meetings, and at least two other patients have been referred to, although they apparently were not examined by the reporting physician. During the past six years, five patients with incontinentia pigmenti were studied at the University Hospitals, and in two of these the full development of the disease was observed.

REPORT OF CASES

CASE 1.—A. S., a white girl, was born in the University Hospitals on Oct. 17, 1947. Delivery was uneventful, and the child seemed normal until the third day, when a widespread patchy dermatitis appeared, with scattered vesicles. A diagnosis of contact dermatitis due to baby oil

From the Department of Dermatology and Syphilology, The State University of Iowa.

1. Bardach, M.: Systematisierte Naevusbildungen bei einem eineiigen Zwillingspaar, Ztschr. Kinderh. **39**:542-550, 1925.

2. Bloch, B.: Eigentümliche bisher nicht beschreibene Pigmentaffektion (Incontinentia pigmenti), Schweiz. med. Wchnschr. **56**:404, 1926.

3. Sulzberger, M. B.: Über eine bisher nicht beschreibene congenitale Pigmentanomalie (Incontinentia pigmenti), Arch. Dermat. u. Syph. **154**:19-32, 1928.

was made and the suspected allergen removed. The eruption improved greatly for several days and then relapsed, with the bullae now in definite lines and bands on the trunk, arms, and legs. It was felt that the child was still contacting baby oil through the medium of the nurses' fingers, the linear distribution thus being accounted for. Further care was instituted, but new crops of vesicles appeared until the baby's discharge from the hospital at the age of 2 mo.

The child was readmitted at the age of 4 mo. with uveitis, keratitis, and secondary cataract of the right eye of two weeks' duration. The character of the skin lesions had changed gradu-

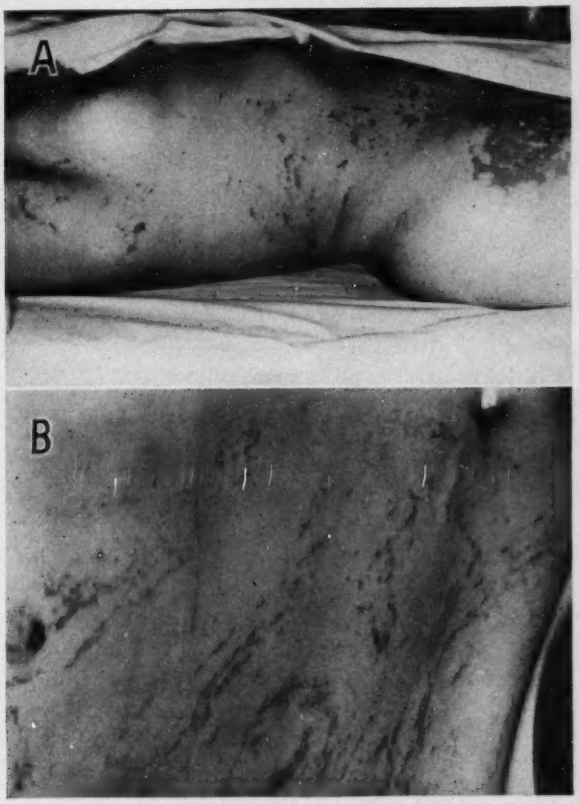


Fig. 1.—*A*, typical pigmented macular lesions on the trunk, Case 5. *B*, Whorls and streaks of pigment on the chest and abdomen, Case 3.

ally to a verrucous and erythematous eruption arranged in a linear distribution, with some apparent residual scarring here and there and small amounts of what appeared to be postinflammatory pigmentation. A diagnosis of mixed verrucous and vascular nevus was made, and a biopsy was performed (Fig. 3*B*). During the next few weeks the apparent vascular element faded out.

At the age of 10 mo. the third and last transformation was noted; the verrucous characteristics had disappeared except for a few short bands about the feet and ankles. In their place was a bizarre collection of fine irregular lines, flecks, and stellate patches of chocolate- to slate-brown pigment. A final diagnosis of incontinentia pigmenti was substantiated by biopsy.

The child also showed spastic tetraplegia, right corneal and lenticular opacity, right optic atrophy, and general retardation of mental and physical growth. The head was small and flat at the occiput; in the scalp there were depressed dirty-brown patches of alopecia. During the next two years no changes occurred in the skin lesions. Four deciduous teeth were congenitally absent, and the rest were pegged. The child was admitted to a state hospital for feeble-minded

Fig. 2.—*A*, linear bullous dermatitis, Case 2, at 10 days of age. *B*, typical incontinentia pigmenti, Case 2, at 10 mo. *C*, dental defects, Case 5. *D*, linear verrucous lesion, right foot and great toe, Case 5.

persons. The mother was below par mentally, showed right external strabismus, and had an undiagnosed crippling disease; the rest of the family was apparently normal.

CASE 2.—L. B., a 10-day-old white girl, was seen in the department of dermatology and syphilology on Nov. 7, 1949, because of a vesicular and pustular dermatitis in lines and bands on the extremities, trunk, cheeks, forehead, and scalp (Fig. 2*A*). The mother stated that the

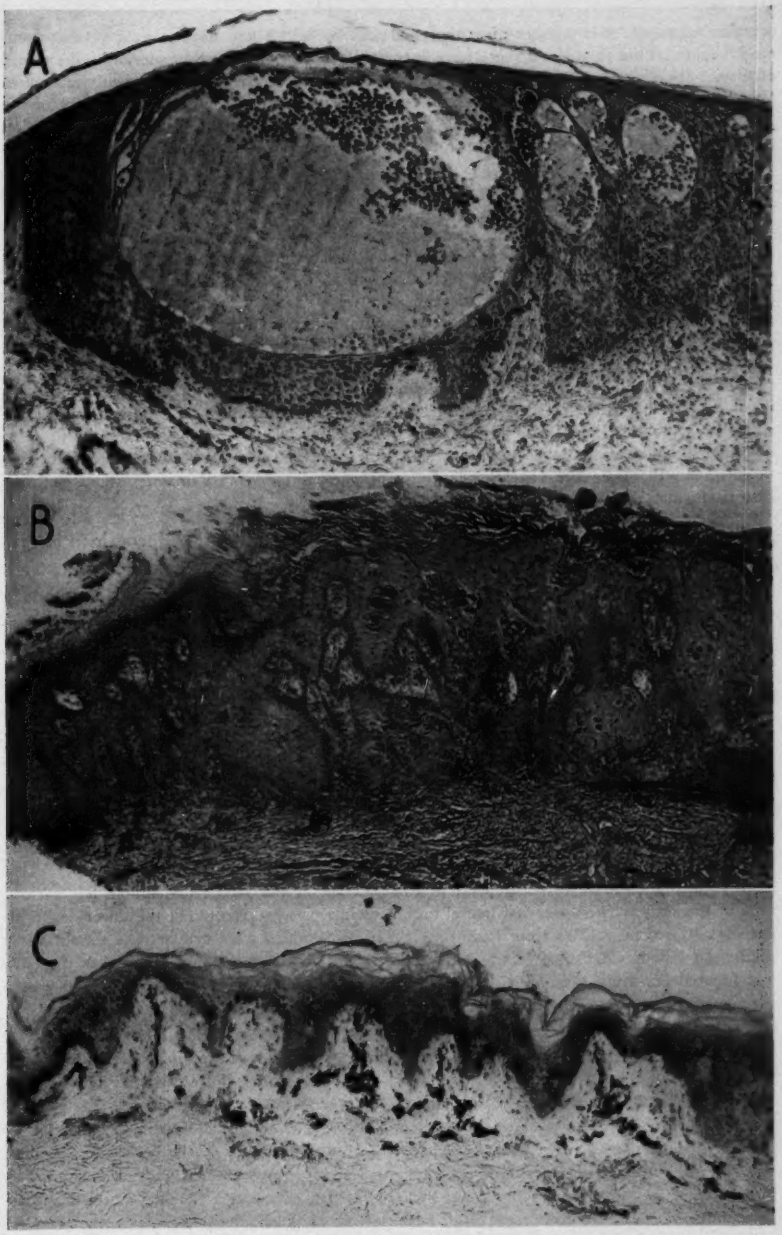


Fig. 3.—*A*, section through linear bullous lesion, Case 2, at 10 days of age. *B*, section through linear verrucous lesion, Case 1, at 4 mo. of age. *C*, section through typical pigmented macule, Case 5, showing relative absence of pigment in the basal layer and large amounts of melanin in the chromatophores. (Silver-methyl-green-pyronin stain.)

eruption appeared "two minutes after the child was born." There were several vesicular and eroded spots on the palate, and there were supernumerary ears bilaterally, anterior to the tragi; otherwise the child appeared to be normal. A diagnosis of incontinentia pigmenti was made, although not without some apprehension at being far out on a limb, and the appearance of the pigmentary disease was predicted to the parents. Vesicles and bullae in a linear distribution continued to appear in crops for several months. Biopsy of a vesicular lesion was made (Fig. 3*A*).

The child was not seen from the age of 2 mo. until she was 10 mo. old. At this time the vesicular lesions had been replaced by the typical streaks, flecks, and arborizing patches of dusky-brown pigment, lending the curious marble-like appearance of incontinentia pigmenti (Fig. 2*B*). On the right foot were remnants of a linear warty outgrowth. The scalp showed a patchy sparseness of hair over the vertex, and there was a dimple over the sacrum but no sinus or hair. General growth and development were normal. Roentgenograms of the skull showed minor anomalous changes of the frontoparietal sutures and revealed absence of the second deciduous molar on the left and cystic change about the first and second deciduous molars on the right. Roentgenograms also showed a supernumerary dorsal hemivertebra and 13 ribs on the left side. The long bones were normal, and there was no evidence of spina bifida, although it could not be ruled out at that age. The parents were normal mentally, and neither of them showed incontinentia pigmenti or any other developmental anomaly. Every effort was made to obtain a second biopsy from a pigmented macule; the parents, however, were apparently sufficiently impressed by the appearance of the prophesied pigmentary manifestations and felt that no further diagnostic procedures were needed.

Both of the preceding cases illustrate the complete picture of incontinentia pigmenti in its progression from inflammation and bullae in linear distribution, through a stage simulating a verrucous epithelial nevus, to its final weird macular pigmentary form. Many of the associated developmental defects, both ectodermal and mesodermal, are also illustrated.

Case 3.—K. C., a 2-yr.-old girl, was seen in the Department of Dermatology and Syphilology on Dec. 1, 1949. At the age of 3 days an "eczema" appeared; it persisted for three months, leaving behind irregular red lines which soon turned dusky brown. The parents did not recall any blisters. Some of the macules faded, particularly on the arms, leaving atrophic patches of similar shape. Right-sided Jacksonian epilepsy had developed during the past several months. Examination of the skin showed the classic picture of incontinentia pigmenti: chocolate-brown pigment in streaks, polygonal macules, and spidery patches (Fig. 1*B*). There was a warty brownish growth along the right great toe. On the thighs the pigmented spots were slightly depressed, and on the arms there were atrophic depigmented linear and spidery lesions. There were pigmentation and partial alopecia in two patches, at the vertex and in the left parietal area of the scalp. The upper left lateral deciduous incisor was absent, and the lower deciduous cuspids and second molars were malformed. The extremities were symmetrical except for a mild right talipes valgus; there was no definite spasticity, but the child dragged her right leg and favored her right arm. Vision and extraocular movements seemed normal. Biopsy of a pigmented macule was done, confirming the diagnosis of incontinentia pigmenti.

Case 4.—C. S., a 4-yr.-old white girl, was admitted to the University Hospitals on July 6, 1944, because of spastic tetraplegia. As far as could be ascertained the typical lesions of incontinenti pigmenti appeared at about 14 mo., along with some scaling but no definite inflammation. The parents were subnormal mentally, and the child was unable to sit, stand, walk, or talk. She exhibited nystagmus and intermittent squint. She was generally underdeveloped and microcephalic. Eleven teeth were present, all poorly formed. The skin of the neck, arms, axillae, and especially the lateral aspects of the trunk was streaked and spotted with chocolate-brown pigmentation in lines, flecks, whorls, and stellate patches, giving it a peculiar marbled appearance. Biopsy confirmed the diagnosis of incontinentia pigmenti.

Case 5.—E. G., a 14-yr.-old girl, entered the University Hospitals on June 22, 1949, presenting a behavior problem with mental deficiency. On examination she was observed to have

the typical pigmentary features of incontinentia pigmenti (Fig. 1*A*). The spots had been present at birth, without preceding blisters but with some erythema. The redness faded quickly, but no further change took place. The patches, lines, and flecks of pigment were present on the trunk, thighs, and legs. There was a linear band of warty character on the dorsum of the right foot and great toe (Fig. 2*D*), and a 1-in. (2.5-cm.) patch of alopecia simulating pseudopelade was found at the vertex. The girl had an I. Q. of 78. Her general development was normal, but roentgenograms showed complete absence of 13 teeth, with three more unerupted (Fig. 2*C*); occult spina bifida was also discovered. Ocular convergence was insufficient, without actual squint. Biopsy of the pigmented skin confirmed the clinical diagnosis of incontinentia pigmenti (Fig. 3*C*). Fourteen of the mother's teeth had never erupted, and were absent on x-ray examination; otherwise the parents were normal.

HISTOPATHOLOGY

Although the vesicular stage of incontinentia pigmenti is mentioned in an occasional case report, no description of the microscopic pathology is available. Biopsy of a vesicular band in Case 2 showed a nonspecific acute inflammatory reaction with vesiculation (Fig. 3*A*). There was a tense intraepidermal vesicle filled with polymorphonuclear eosinophils. Smaller vesicles and marked spongiosis appeared around the main vesicle. There was a moderate infiltrate composed of round cells, eosinophils, and polymorphonuclear neutrophils in the papillae, tending to invade the epidermis, and a mild perivascular round-cell infiltrate was present in the upper part of the dermis. Only small amounts of pigment were visible in the basal-cell layer and in the papillae.

The second stage in the development of incontinentia pigmenti, that simulating an epithelial nevus, has also been described in the literature, but again without histopathologic study. Biopsy of such a lesion was done in Case 1 (Fig. 3*B*), revealing considerable hyperkeratosis, some tendency to dyskeratosis, acanthosis, and a banal papillary and subpapillary infiltrate. No unusual amount or distribution of pigment was noted.

The third and final stage in the metamorphosis of the disease is well described as to its microscopic pathology. All the cases herein presented, except Case 2, in which a biopsy was refused, showed the classic picture (Fig. 3*C*): diminution or absence of pigment in the basal-cell layer of the epidermis and large quantities of melanin in chromatophores in the pars papillaris of the dermis. The epidermis ranged from mildly acanthotic to mildly thinned and flattened, with or without mild hyperkeratosis. One case showed a small amount of perivascular inflammation. None showed any evidence of epidermal or dermal nevus elements.

COMMENT

Incontinentia pigmenti is a disease characterized by developmental defects of the integument and its accessories, ocular and central-nervous-system defects, osseous deformities, and perhaps other mesodermal anomalies. Inflammatory or bullous and verrucous prodromes frequently occur before the final pigmented stage appears. Its increasingly frequent appearance in the literature bespeaks an increased knowledge of the disease; yet within the past year its existence as an entity has been denied by competent dermatologists. Although they would class it as a systematized nevus, the peculiar phases in its development, its histopathologic picture, and its total dis-

regard for the midline and for cleavage planes make this view rather hard to support. It would seem that the disorder is better labeled a developmental anomaly, at least for the present.

The hereditary nature of the disease is not well established, although Cockayne [4] classed it as a dominant inborn anomaly. There are authenticated cases of familial and hereditary transmission of the disease, and other cases show inheritance of other developmental anomalies in association with incontinentia pigmenti; at least the disorder tends to occur in families with defective germ plasm.

The associated developmental defects in patients with incontinentia pigmenti and their families vary widely and will be discussed later.

The accompanying table demonstrates the particulars in the 30 cases so far described in the literature.[5] The father of the patient in Case 20 and the sister of the patient in Case 27 swell the total to 32.

There is a strong sex predominance in incontinentia pigmenti; of 37 cases, including the five here reported, 33 were in females and four in males. One of the male patients, the father of the patient in Case 20, was not examined by the physi-

4. Cockayne, E. A.: Inherited Abnormalities of the Skin and Its Appendages, London, Oxford University Press, 1933, p. 325.

5. (*a*) Bardach.[1] (*b*) Bloch.[2] (*c*) Sulzberger.[3] (*d*) Naegeli, O.: Familiärer Chromatophorennävus, X. Schweiz. derm. Gesellschaft, April 10, 1926, Schweiz. med. Wchnschr. **57**:48 (Jan.) 1927. (*e*) Almkvist, J., cited by Sulzberger.[3] (*f*) Lechleutner, cited by Siemens, H. W.: Arch. Dermat. u. Syph. **157**:382-391, 1929. (*g*) Siemens, H. W.: Die Melanosis corii degenerativa, eine neue Pigmentdermatose, ibid. **157**:382-391, 1929. (*h*) Levin, O.: Nevus Reticularis et Pigmentosus, Arch. Dermat. & Syph. **27**:141 (Jan.) 1933. (*i*) Beintema, K.: Incontinentia pigmenti, Nederl. tijdschr. geneesk. **78**:4910, 1934; Zentralbl. Haut- u. Geschlechtskr. **50**:381 (March) 1935. (*j*) Moncorps, C.: Incontinentia pigmenti bei einem 2¼ jährigen Knaben, ibid. **54**:291 (Oct.) 1936. (*k*) Seidlmayer, H.: Über eine neues Syndrom multipler Abartung: Pimentanomalie, kongenitale ektodermale Dysplasia, Nebennierenmarkaplasie, Ztschr. Kinderh. **63**:451-487, 1942. (*l*) Kitamura, K., and Chan, S. (Shengshün): Case Presentation, Hihu-to-Hitunyo **4**:632, 1938; abstracted, Dermat. Wchnschr. **108**:598 (May) 1939. (*m*) Sulzberger, M. B.: Incontinentia Pigmenti, Arch. Dermat. & Syph. **38**:57-69 (July) 1938. (*n*) Schuermann, H.: Incontinentia Pigmenti, Dermat. Wchnschr. **109**:979-981 (Aug.) 1939. (*o*) Carol, W. L. L., and Bour, D. J. H.: Melanoblastosis Cutis Linearis s. Systematisata, Arch. Dermat. u. Syph. **182**:315-328, 1941. (*p*) Pierini, L. E.; Garcia, L. A.; Pomposiello, I., and Rey, O.: Incontinentia Pigmenti (Bloch-Sulzberger), Rev. argent. dermatosif. **29**:181-190 (Sept.) 1945. (*q*) Kalz, F., and Mackenzie, E.: Incontinentia Pigmenti, Brit. J. Dermat. **59**:375-378 (Nov.) 1947. (*r*) Sobel, N.: Incontinentia Pigmenti, Arch. Dermat. & Syph. **58**:467-468 (Nov.) 1948. (*s*) Sulzberger, M. B., and Bloom, D.: Incontinentia Pigmenti, ibid. **58**:468 (Nov.) 1948. (*t*) Crawford, G. M., and Diamini, C. R.: Incontinentia Pigmenti, ibid. **60**:926-927 (Nov.) 1949. (*u*) Curth, H. O.: Incontinentia Pigmenti in a Girl Aged 13 Months, ibid. **60**:970 (Nov.) 1949; personal communication to the author. (*v*) Hopkins, J. G.: Incontinentia Pigmenti, Arch. Dermat. & Syph. **60**:848 (Nov.) 1949. (*w*) Epstein, S.: Case presentation, Minnesota Dermatological Society, Marshfield, Wis., Sept. 1948. (*x*) Pinkus, H., in discussion on Curth, H. O.: J. Invest. Dermat. **13**:233-247 (Nov.) 1949 (Epstein's report [5w] is also commented on). (*y*) Case presentation, Case 19, Baltimore-Washington Dermatological Society, Duke Hospital, Durham, N. C., Nov. 13, 1948. (*z*) Haber, H.: Incontinentia Pigmenti (Bloch-Sulzberger), Brit. J. Dermat. & Syph. **61**:104-105 (March) 1949. (*a'*) Curth, H. O.: Follicular Atrophoderma and Pseudopelade Associated with Chondrodystrophia Calcificans Congenita, J. Invest. Dermat. **13**:233-247 (Nov.) 1949. (*b'*) Zakon, S. J., and Eirinberg, I.: A Case for Diagnosis (Incontinentia Pigmenti of Bloch and Sulzberger? Nevus Pigmentosus et Reticularis with Hyperkeratosis?), Arch. Dermat. & Syph. **61**:1044-1045 (June) 1950. (*c'*) Caro, M. R., in discussion on Zakon and Eirinberg.[5b'] (*d'*) Buchholz, A. M.: Case presentation, Chicago Dermatological Society, Oct. 18, 1950.

Data Concerning Thirty-Seven Cases Reported in the Literature

Case No.	Author	Date of Report	Sex	Age at Onset	Age at Examination	Inflammation	Vesicles, Bullae	Verrucous Element	Typical Pigmentation	Other Defects	Familial Tendency	Comment
1	Bardach [1]	1925	F	17 mo.	2 yr.	+	?	O	+	+	IP	Identical twins
2	Bardach [1]	1925	F	17 mo.	2 yr.	O	O	O	+	+	IP	
3	Bloch [2]; Sulzberger [3]	1926	F	B	18 mo.	+	O	O	+	+	O	Fading at 3½ yr.
		1928	..		42 mo.							
4	Naegeli [5d]	1927	M	?	?	?	?	?	+	?	IP	Father and two daughters with incontinentia pigmenti; third sibling said to have had hydroa vaceiniforme at age 10
5	Naegeli [5d]	1927	F	2 yr.	12 yr.	O	O	O	+	?	IP	
6	Naegeli [5d]	1927	F	2 yr.	9 yr.	O	O	O	+	?	IP	
7	Almkvist [5e]	1928	M	1 yr.	6 yr.	?	?	?	+	?	?	.....
8	Lechleutner [5f]; Siemens [5g]	1925	F	1 mo.	11 mo.	+	O	O	+	+	O	Fading or gone, with atrophy, at 4 yr. of age
		1928	..		4 yr.							
9	Levin [5h]	1932	F	?	3 yr.	?	?	?	+	O	O	Negro
10	Beintema [5i]	1934	F	5 mo.	5 yr.	?	?	+	+	O	O	Atrophy on arms and legs
11	Moncorps [5j]; Seidlmayer [5k]	1936	M	3 mo.	27 mo.	O	O	O	+	+	O	Fading at 10 yr.
		1942	..		33 mo.							
12	Kitamura and Chan [5l]	1938	F	B	3 mo.	+	+	?	+	O	?	Japanese?
13	Sulzberger [5m]	1938	F	B	19 yr.	O	O	O	+	+	OCD	.....
14	Schuermann [5n]	1939	F	B+	18 mo.	+	+	O	+	?	O	Fading with atrophy at 2½ yr.
15	Carol and Bour [5o]	1941	F	3 mo.	9 mo.	+	O	O	+	?	O	No teeth at 9 mo.
16	Seidlmayer [5k]	1942	F	2 days	10 mo.	O	O	O	+	+	O	.....
17	Seidlmayer [5k]	1942	F	B+	8 days	+	+	O	+	+	O	Unchanged at 3½ yr.
18	Pierini et al.[5p]	1945	F	5 days	6 mo.	+	+	+?	+	+	O	.....
19	Kalz and Mackenzie [5q]	1947	F	B	2 yr.	+	O	+?	+	+	O	.....
20	Sobel [5r]	1947	F	B	2 yr.	O	O	O	+	O	IP	Chinese; daughter of patient in Case 21
21	Sobel [5r]	1947	M	B	?	?	?	?	+	?	IP	Chinese
22	Sulzberger and Bloom [5s]	1947	F	B+	1 yr.	O	O	+	+	?	?	Blue scleras in child and mother
23	Crawford and Diamini [5t]	1947	F	3 mo.	4 yr.	O	O	O	+	O	O	.....
24	Curth [5u]; Hopkins [5v]	1947	F	?	13 mo.	?	?	?	+	+	O	Unchanged at 4½ yr.
		1947	..									
25	Epstein [5w, x]	1948	F	1 day	Early	+	+	+	+	?	?	.....
26	Duke University case [5y]	1948	F	?	30 yr.	?	?	?	+	+	OCD	.....
27	Haber [5z]	1949	F	B	11 mo.	+	+	+	+	+	O	.....
28	Curth [5a']	1949	F	B	9 yr.	+?	O	O	+	+	IP & OCD	Many defects in family
29	Curth [5a']	1949	F	?	?	?	?	?	+	+		Sister of patient in Case 28
30	Zakon and Eirinberg [5b']	1949	F	3 days	3 mo.	+	+	+	+	?	O	.....
31	Caro [5c']	1949	F	2-3 days	3 days	+	+	+	+	?	?	Apparently typical incontinentia pigmenti at 3 to 4 yr.
32	Buchholz [5d']	1950	F	B	2 yr.	?	?	?	+	+	?	Extremely extensive case; Negro
33	Carney, Case 1	1947*	F	3 days	3 days	+	+	+	+	+	OCD	.....
34	Carney, Case 2	1949*	F	B	10 days	+	+	+	+	+	O	.....
35	Carney, Case 3	1949*	F	3 days	2 yr.	+	O	+	+	+	O	.....
36	Carney, Case 4	1944*	F	14 mo.	4 yr.	+	O	O	+	+	OCD	Died at 8 yr. of intercurrent disease
37	Carney, Case 5	1949*	F	B	14 yr.	?	O	+	+	+	OCD	.....

* The asterisk indicates the date at which the patient was first seen by the author.

Explanations of abbreviations are as follows: *B*, present at birth; *B+*, appearance soon after birth; *IP*, incontinentia pigmenti in others in family; *OCD*, other congenital defects in family; +, lesion present; ?, report equivocal or information inadequate, and O, lesion apparently not present.

cian, and detailed accounts and photographs are not available in the cases of the males reported by Naegeli and Almkvist. However, there can be no doubt of the authenticity of Case 11 as reported by Moncorps and later Seidlmayer; thus the sex predilection is not absolute.

Too few cases exist for any estimate of racial incidence; the anomaly has been reported in Negroes and in Chinese and Japanese.

Incontinentia pigmenti begins early in life but apparently can appear at any time up to the end of the second year. About half the cases showed an inflammatory prodrome, and about 30%, vesiculation. Similarly, warty lesions were observed in one third of the cases. Many of the case reports are incomplete in regard to these prodromal features, perhaps because they were not looked for. In line with the frailty of human memory it is interesting to note that a history of inflammation or of blisters was obtained most frequently in those patients seen at an early age; in three of our cases definite inflammation was present; in a fourth, an equivocal history was obtained, and in the fifth, no such history was forthcoming from the informant, a grandmother, the parents being mentally retarded.

Associated developmental defects in the 37 cases include the following: delayed or imperfect dentition, 11 cases; osseous deformities, eight; alopecia, seven; spastic paralysis, seven; strabismus, five; epilepsy, four; microcephaly, four; mental deficiency, four; retarded growth and development, three; corneal opacity, three; dystrophia unguium, three; cataracts, two; optic atrophy, two; blue scleras, two; nystagmus, two; follicular atrophoderma, two; and single instances of retrobulbar glioma, congenital heart disease, urachal cyst, absence of retinal pigment, supernumerary ears, and nevoid patch of the retina. In five of the cases there were no developmental defects other than the pigmentary disease, and for 10 other cases the reports are equivocal or incomplete.

The disease showed a familial or hereditary tendency in four instances, involving nine cases, and in seven further instances other developmental defects were present in siblings or parents. The latter included dental anomalies, follicular atrophoderma, osseous deformities, mental deficiency, strabismus, paralyses, blindness, blue scleras, nail changes, and corneal opacities.

Many of the cases, including those I observed, showed some tendency to atrophy in certain of the pigmented areas, particularly over a period of years. Curth [6] feels that this tendency represents a part of the syndrome of follicular atrophoderma, pseudopelade, and chondrodystrophia calcificans congenita on which she has reported. In my cases the atrophy has appeared to be in areas presently or previously involved with the pigmentary disorder, the areas of alopecia have for the most part been pigmented, and there has been no evidence of chondrodystrophia calcificans congenita. Closer examination, better description, and thorough x-ray studies will be necessary to resolve this question. It is my belief that defects in development occurring in this group of disorders are widely diversified and defy delineation into fixed categories.

CONCLUSIONS

Incontinentia pigmenti is a rare disease, probably developmental in origin, characterized by the deposition of melanin in chromatophores in the dermis, forming bizarre designs of chocolate-brown streaks, flecks, whorls, and arborizing

6. Curth, H. O.: Personal communication to the author.

patches which do not follow lines of cleavage or distributions of nerves and do not respect the midline of the body. The disease is further characterized in one third to one half of the cases by linear and patchy inflammatory and bullous lesions and by an intermediate stage which simulates an epidermal nevus. Incontinentia pigmenti is frequently associated with varied other developmental defects, involving both ectodermal and mesodermal structures. Although its hereditary nature is not completely understood, the disease shows some tendency to occur in families, either as incontinentia pigmenti or in the form of other developmental defects.

SUMMARY

The existing literature on incontinentia pigmenti is reviewed, and the associated developmental anomalies in these patients and their families are listed. Reports of five new cases, all showing the typical pigmentary picture, are presented. In addition the bullous, inflammatory, and verrucous phases of incontinentia pigmenti are stressed, the bullous phase being so typical that the diagnosis can be made during it, prior to the deposition of any pigment. Histopathologic findings in all three stages are described.

PSYCHOCUTANEOUS ASPECTS OF PERSISTENT PRURITUS AND EXCESSIVE EXCORIATION

PHILIP F. DURHAM SEITZ, M.D.
INDIANAPOLIS

As if Divinity had catch'd
The itch, on purpose to be scratch'd.
Butler, *Hudibras*

THE PURPOSE of this report is to present certain clinical impressions which have been formulated as a result of psychiatric study and treatment of 120 patients with persistent pruritus and excessive excoriation. Several diagnostic categories were represented in this group: lichen simplex chronicus, pruritus ani et vulvae, disseminated neurodermatitis, and so-called "neurotic excoriations." The differences between these various disorders will not be dealt with in this report. Attention will be directed instead to the features of similarity, viz., the psychocutaneous aspects of persistent pruritus and excessive excoriation.

THE SURFACE ASPECTS OF COMPOSURE

One of the earliest impressions gained in this study had to do with the appearance and behavior of these patients. When first seen in a clinical setting patients with persistent pruritus and excessive excoriation do not appear to be tense or "nervous." They usually exhibit a surface appearance of composure. This emotionally undemonstrative behavior is maintained throughout the initial interviews, giving a deceptive impression of equanimity. The patients sit back in the chair, cross their legs rather deliberately, sit very still, smoke with a certain preciseness, and look the physician straight in the eye. Control is stamped on their every movement, gesture, and expression. As the interviews proceed, a gradual relaxation of the initial rigidity occurs, and it becomes apparent that the earlier attitude of composure was defensive. Beneath the surface, patients with persistent pruritus and excessive excoriation are found to be highly sensitive. They are easily hurt by the slightest evidence of disapproval and are quick to anger at even minor affronts. To protect themselves from exposing this sensitivity, which they consider evidence of weakness and inferiority, these patients erect a façade of composed detachment. They seal themselves off from other people by adopting an attitude of sophisticated disinterest.

Support for this study was provided by the Indiana Council for Mental Health.

Presented during the Psychosomatic Symposium, American Academy of Dermatology and Syphilology, Chicago, Dec. 5, 1950.

From the Division of Psychiatric Research, Department of Neuropsychiatry, Indiana University Medical Center, and The Indianapolis General Hospital.

This defensive maneuver probably does serve its original purpose for the patient, since it makes him feel less vulnerable in social situations; but he pays an emotional price for this protection, because he wants and needs the approval, acceptance, and love of others. People do not warm up to him. He is often referred to as a "cold fish" and is shrugged off as unfriendly. By defending his emotional Achilles heel with an armor of asocial aloofness, the patient exposes himself to the even more dangerous threat arising from loss of love and approval.

In the psychotherapeutic management of patients with persistent pruritus and excessive excoriation the physician cultivates an atmosphere in which the patient can feel free to let down these emotional bars. At first the patient is very cautious and tentative about showing his hand and tests the doctor in many small ways to find out whether or not the therapeutic situation is really safe. When he discovers that the physician accepts his sensitivity, rather than making fun of it, something happens in the patient that we call a corrective emotional experience. Whereas before he has always looked upon his emotional sensitivity as a sign of weakness and inferiority, he now finds that it is something acceptable to and even admired by another person. This experience, which grows out of the permissive and sympathetic relationship with the physician, is thus emotionally corrective. It paves the way toward the patient's discarding the inefficient and handicapping defensive armor. The patient carries this experience with the physician out of the medical office into his everyday life. What he has learned in this relationship makes it possible for him to relate himself to other people in a more genuine and undefensive way. He learns that it is safe to wear some of his emotions on his sleeve, instead of on his skin.

THE CLANDESTINE ASPECTS OF SCRATCHING

Patients with persistent pruritus and excessive excoriation seem to avoid scratching during initial interviews with the physician, but in later interviews, after some rapport has developed, they appear to exhibit more than an average amount of skin stroking, touching, picking, and rubbing. This finding suggests that these patients may have a need to conceal their preoccupation with the skin, especially in the presence of strangers or persons with whom they feel insecure. Within a few interviews the patients tend to bring out the shame they feel in connection with scratching. Many are able to discuss the clandestine methods they have developed for excoriating the skin, in order to escape detection by others; and these admissions are accompanied with accentuated feelings of inferiority and shame. When this material is forthcoming, the patients begin to recognize that scratching is one of the principal factors responsible for perpetuating the cutaneous process.

The feeling of shame in association with scratching seems to have its principal origins in the fact that this activity is so pleasurable and erotically gratifying. Numerous patients told how ashamed they felt following an orgy of exquisitely enjoyable excoriation. The shame was directly related by these patients to the erotic nature of their scratching, and some expressed fear that this activity might represent a form of sexual perversion.

This finding is not new. Various dermatologists and psychiatrists have discussed the phenomenon of cutaneous erotism, or heightened sensuality of the skin, in patients with excessively excoriated eruptions. The term "furor eroticus" has

been applied by others to the compulsive and erotogenic attacks of excoriation in these patients. The findings of the present study consistently supported this concept of the erotic nature of excessive excoriation. Although none of the patients in this study experienced sexual orgasms as a result of excoriation, many described the sensations as sensuously even more voluptuous and tantalizing than genital orgasm. Such scratching of the skin was associated with phallic erection and increased seminal flow, but not ejaculation, in some of the male patients. Many of the patients developed clear insight into the masturbatory nature of their excoriation and described their shame in connection with scratching as similar to the shame associated with masturbation. It appears to be the shame associated with sensual cutaneous pleasure which is responsible for the clandestine aspects of excessive excoriation.

These psychocutaneous aspects of persistent pruritus and excessive excoriation are of practical significance in the psychotherapeutic management of such patients. Perhaps needless to say, it would be most unwise for the physician to force such formulations upon the patient, even though the physician might know them to be true. It is essential that the patient be given enough time to arrive at such insights on his own, and doing so involves repeated therapeutic interviews for at least several months. Once the patient does see his scratching in this light and begins to understand why he is so ashamed of excoriating himself, at least two therapeutic benefits result. In the first place, a corrective emotional experience again occurs, for the patient learns that he is still acceptable to the physician even though he has told him a secret about himself which seemed morbid and shameful. The physican's unperturbed acceptance of him in the face of this confession helps further to dispel the patient's feelings of inferiority, shame, and untouchableness. In addition, it tends to bring the activity of scratching into more conscious control. Whereas previously the excoriation had been motivated by unconscious impulses beyond the patient's awareness, these new insights into the unconscious origins of the behavior help to make conscious control of scratching more possible.

THE PARADOXICAL ASPECTS OF CUTANEOUS MUTILATION

A further finding in patients with persistent pruritus and excessive excoriation is related to the actual damage which these persons inflict upon their skins. Is this merely a fortuitous end result of gratifying themselves erotically by means of scratching? Or is the unconscious intent of excoriation actually to damage the skin? Or is it possible that the scratching serves a dual function of gratifying and damaging? Paradoxical though the latter possibility may seem, it was found to be the most appropriate explanation for the destructive and at the same time erotically gratifying excoriation in the patients studied. There is an actual, although largely unconscious, need in such patients to punish themselves; and this punishment is accomplished by ripping, tearing, and picking the skin. In some of the patients this feature is more conspicuous than in others, the least self-destructive tendencies being found in the patients who merely rub the skin. The extent to which some of these patients excoriate themselves is so patently self-punitive that the process hardly justifies the term "symbolic." Anyone who has witnessed the ripped, shredded, and bleeding skin of a patient with excessive excoriation could hardly escape consideration of its "partial suicidal" connotations. Yet despite the deep and obviously painful excoriations which these patients inflict upon themselves,

it is found that the scratching is nonetheless erotically gratifying. It seems as though by means of excoriation the patient both punishes and pleases himself. Psychiatrists have long known that certain neurotic symptoms accomplish precisely this dual purpose, the technical term "masochism" being applied to symptoms which are at the same time self-destructive and erotically gratifying.

A possible answer to the problem of why such patients have an unconscious need to punish themselves was found in their fantasies during scratching and in the numerous dreams which precipitated nocturnal attacks of excoriation. Milton Miller [1] suggested a relationship between dreams and nocturnal scratching, and the present study has confirmed this concept in numerous patients. Fantasies during scratching almost invariably have to do either with destructively aggressive behavior on the part of the patient or with wish-fulfilling situations in which he is loved and approved of by others, or with both. Dreams which precipitate scratching follow the same pattern of destructive rage in association with frustrated needs for love and approval. It is the destructive rage which causes guilt in the patient with excessive excoriation. Such patients characteristically suppress feelings of anger and resentment because they experience so much anxiety when hostile emotions are expressed. They seem to feel that it is wicked and evil to have hostile thoughts toward another person, and they react to their own repressed rage with guilt. Life situations which threaten loss of love and approval are especially prone to generate anger and resentment. These feelings of rage are repressed and in turn are reacted to with guilt. Excessive excoriation appears to be a symptom which both atones for this guilt through self-punishment and also, at the same time, gratifies the need for love through cutaneous erotic pleasure. In addition, scratching probably serves as a muscular release mechanism for the physiological tension created by repressed rage.

The psychotherapeutic implications of such a formulation are as follows. If the physician employs a permissive psychotherapeutic approach for the patient with persistent pruritus and excessive excoriation, these repressed hostile feelings will tend to be mobilized and brought out during treatment. Sometimes, very stormy and explosive reactions of aggressive rage are precipitated by the interviews, and the physician must be careful to liberate no more of this repressed anger than can be successfully dealt with by the patient. If too much resentment and rage are uncovered at one time, marked feelings of guilt may overcome the patient. On the other hand, if the physician is permissive, accepting, and uncritical when the patient expresses hostility during the interviews, the patient sometimes begins to act out his hostility at home, or at work, or in other social settings away from the treatment situation. When the patient discovers that he can express his anger to the physician without being criticized for it, he may get the idea that this same sort of behavior is appropriate in social situations. He tends to overdo his newly developed ability for expressing hostility, sometimes with results which are very embarrassing both to the patient and to his physician. Psychiatrists refer to this undesirable, but sometimes unavoidable, reaction as "acting out," and they attempt to control it by means of interpretation and explanation. Aggressive acting out

1. Miller, M.: A Psychological Study of a Case of Eczema and a Case of Neurodermatitis, Psychosom. Med. **4**:82 (Jan.) 1942; Psychodynamic Mechanisms in a Case of Neurodermatitis, ibid. **10**:309 (Nov.-Dec.) 1948.

of this type is found to be associated consistently with diminution of excoriation; but the physician's task is by no means ended then and there. This sort of cure, at the expense of the patient's social behavior, is frequently worse than the original psychocutaneous disease. The physician must set limits on acting-out behavior of this kind and attempt to help the patient find constructive rather than socially destructive outlets for his anger and resentment.

THE SEQUENTIAL ASPECTS OF ITCHING AND SCRATCHING

The final impression which was formulated as a result of the present study has to do with the relationship between itching and scratching in patients with persistent pruritus and excessive excoriation. Since the patients usually present themselves to the physician with the chief complaint of "maddening itching," there is a tendency to assume that pruritus is responsible for the excessive excoriation. On the basis of this study it was concluded that itching is not necessarily responsible for scratching in these patients. Many of the patients developed insight into the fact that scratching caused itching, or at least that scratching was responsible for the "maddening sensations" which they had referred to earlier as itching. Disturbing sensations in the skin do seem to occur prior to an attack of excoriation, particularly following life experiences in which anger is provoked but not expressed. These sensations, however, do not appear to be those of intense pruritus, being described by the patients as vague, irresistible feelings in the skin which intensify the need for excoriation. Once scratching is resorted to, pruritus of a sort does then occur, although the impression was gained that this is more of a tickle than an itch. Further evidence that excoriation is sequentially more fundamental than pruritus in these disorders is the fact that "itching" disappears only after the patient is able to control scratching. It may well be that the "maddening itching" is actually a maddeningly frustrating sensation induced by scratching. If this is true, it would be more correct to speak of a "scratch-itch complex" than to refer to an itch-scratch sequence in such patients.

Even this point can be valuable to the physician in managing such patients psychotherapeutically. When the patient is able to see his scratching in this perspective, as the mechanism through which his "itching" arises, the way is paved for further insight into the unconscious origins of his need to excoriate the skin. In this regard it is important that the use of the term insight be clarified. It should be remembered by the physician that insight alone is not tantamount to cure. Hence it is useless to bombard the patient with interpretations and formulations such as those presented in this report. Indeed, such an intellectual approach to the problem will only increase the patient's emotional resistances. If the patient is to improve as a result of psychotherapeutic management, it is principally the patient's relationship to the physician which accomplishes this result. It is not merely insight but the corrective emotional experiences arising from the skilfully controlled physician-patient relationship which make psychotherapeutic cure possible in patients with persistent pruritus and excessive excoriation.

SUMMARY

As a result of psychiatric study and treatment of 120 patients with persistent pruritus and excessive excoriation, certain impressions and hypotheses have been formulated concerning the psychocutaneous aspects of these disorders. Such

patients appear to control and suppress their feelings, presumably because they look upon their own emotional sensitivity as a sign of weakness, inferiority, and vulnerability. They tend to be especially sensitive to affronts and to loss of love and approval, to which they react with unexpressed rage. The repressed rage is reacted to in turn with guilt. These unexpressed feelings of rage and guilt, as well as the strong repressed needs for love, may find symptomatic expression in the form of scratching. Excoriation appears to serve the complex functions of muscular release of the physiological tension created by repressed rage, atonement for guilt through mutilating self-punishment, and gratification of the need for love through cutaneous erotic masturbatory pleasure. Because of the apparently masturbatory nature of scratching in these patients, excoriation may be associated with feelings of shame, which may account for the clandestine aspects of excessive excoriation. It appears probable that scratching is responsible for the "maddening itching" complained of by these patients, rather than the reverse.

Successful psychotherapeutic management of patients with persistent pruritus and excessive excoriation involves a permissive therapeutic relationship with the patient in which corrective emotional experiences may occur. By the physician's consistent acceptance of him in the face of his expressed inferiority and rage, the patient learns to accept himself and to find constructive rather than personally destructive methods for expressing aggressiveness. If as a result of the permissive therapeutic atmosphere the patient begins to act out his resentments in social settings, an eventuality consistently associated with improvement of the psychocutaneous disorder, limits must be set in order to prevent the development of antisocial behavior. From the psychotherapeutic standpoint, it is especially important that the physician understand that insight alone is not tantamount to cure. Benefit from psychotherapeutic management in such cases derives principally from the corrective emotional experiences associated with the skilfully controlled relationship between the patient and his physician.

EFFECTS OF PODOPHYLLUM ON BASAL-CELL EPITHELIOMAS

CHARLES F. SIMS, M.D.
NEW YORK
AND
NATHAN PENSKY, M.D.
BROOKLYN

PODOPHYLLUM resin is the resinous extract of the plant Podophyllum peltatum. The studies of Kaplan [1] indicated that it has therapeutic action on condyloma acuminatum. King and Sullivan [2] treated 80 patients with condylomata acuminata by utilizing podophyllum suspended in liquid petrolatum or dissolved in alcohol. They proved the efficacy of the latter method of treatment and described the histopathologic observations of the action of the drug on the condylomata and on the surrounding skin.

Their interesting and careful observations revealed that in 24 hours the application of podophyllum produced a severe inflammation, which remained visible for three days. The upper layer of prickle cells became swollen and large, and many of the intercellular bridges disappeared. The enlarged cells contained many keratohyaline granules. Often the cells showed a fine reticulated structure. The cytoplasm was pale-staining and basophilic. Many of the cells appeared vacuolated and contained a darkly stained, somewhat broken nucleus. Various cellular changes were seen in the deeper prickle-cell layers. A large, pale, and distinctly basophilic cell was present. The cytoplasm of this cell presented a prominent reticulum. The nucleus was not present, but nuclear material was dispersed as dots or rods suggesting distorted mitotic figures. There were other changes not quite as characteristic, such as eosinophilic-staining cells with pyknotic nuclei and others with vacuolated cytoplasm and pyknotic nuclei. Other bizarre features, such as broken-up nuclear material, were noted. It was impossible to distinguish the latter from unusual mitoses or karyorrhexis. The cytoplasm revealed various shades of staining. The nuclei were shrunken, and cell membranes were accentuated and thickened. Some changes were noted in the basal-cell layer as well, but not with any constancy.

Seven days after the application of podophyllum, occasional pyknotic eosinophilic cells surrounded by groups of normal cells of the rete were seen. Some of the basal-cell nuclei were enlarged and elongated and contained heavy chromatin, whereas

From the Department of Dermatology and Syphilology of the New York University Post-Graduate Medical School, Dr. Marion B. Sulzberger, chairman, and the Skin and Cancer Unit of University Hospital.

1. Kaplan, I. W.: Condylomata Acuminata, New Orleans M. & S. J. **94**:338, 1942.

2. King, L. S., and Sullivan, M.: Effects of Podophyllin and of Colchicine on Normal Skin, on Condyloma Acuminatum and on Verruca Vulgaris: Pathologic Observations, Arch Path. **43**:374 (April) 1947. Sullivan, M., and King, L. S.: Effects of Resin of Podophyllum on Normal Skin, Condylomata Acuminata and Verrucae Vulgaris, Arch. Dermat. & Syph. **56**:30 (July) 1947.

other nuclei were shrunken and deeply stained. Widespread vacuolation of the basal cells as well as perinuclear vacuolation of the prickle cells was present.

It is of interest to note that the curious large cells with changes resembling abortive or atypical mitoses which are designated "podophyllum cells" are relatively infrequent in podophyllum-treated condyloma. However, in cases of colchicine-treated condyloma this type of change is common.

King and Sullivan,[3] in reviewing the extensive literature and analyzing their own observations, state that the cytologic effects of podophyllum and colchicine are similar and that these drugs are merely two of a small group of substances which exert profound effects on cell division. They state that the action of podophyllum kills some of the cells outright, as is evidenced by eosinophilic shrunken cytoplasm and pyknotic or karyorrhectic nuclei. Other cells undergo morphologic disturbances interpreted as abortive irregular mitoses. Still other changes are degenerative. King and Sullivan conclude that podophyllum and colchicine applied locally exert profound effects on the function of the cell. There is no evidence to prove the mechanism of the action on cellular metabolism.

These profound effects caused by podophyllum have stimulated many investigations in cytologic research. Sullivan and Wechsler [4] used the root tips of the plant Allium cepa and dipped them in a solution of podophyllum resin. Profound cytologic changes were observed in the late prophase, and arrest of mitosis was seen in the metaphase. Cornman,[5] working with starfish eggs, found that podophyllum inactivated mitotic spindles. Selective tumor-damaging effects and prevention of growth of certain mouse-tumor stains were also noted by investigators working on mouse-tumor cells and tumor cultures.[6]

Podophyllum resin contains several known and perhaps some unknown components. Sullivan [7] presented data that indicated that podophyllotoxin is the component in the resin that is responsible for the curing of condyloma acuminatum and of arresting mitosis of the epidermal cells. Whether there are other components that may exert the same action is not known, nor is it agreed that the mechanism that destroys condylomata acuminata causes arrest of experimental tumors of the mouse.

THE PROBLEM; METHODS, MATERIALS USED

The profound cytologic effects of podophyllum when applied to normal skin and condylomata acuminata led us to investigate whether or not the drug could produce similar effects when applied to basal-cell epitheliomas. We were interested especially to determine whether or not cure or regression of the basal-cell tumor would be obtained on topical applications of podophyllum. We selected basal-cell tumors for this study because of the following considerations: In the large dermatologic outpatient material of the Skin and Cancer Unit we were certain of an adequate supply of such growths which were small enough to be completely

3. King, L. S., and Sullivan, M.: The Similarity of Podophyllin and Colchicine Effects and the Use of These Drugs in the Treatment of Condylomata Acuminata, Science **104**:244, 1946.

4. Sullivan, B. J., and Wechsler, H. I.: The Cytologic Effect of Podophyllin, abstracted, Science **105**:433, 1947.

5. Cornman, I.: The Effects of Podophyllin on the Maturation and Cleavage of the Starfish Egg, Biol. Bull. **93**:214, 1947.

6. Belkin, M.: Effect of Podophyllin on Transplanted Mouse Tumors, Federation Proc. **6**:308 (No. 1, Pt. 2), 1947. Sullivan, M., cited by Hartwell, J. L., and Shear, M. J.: Cancer Res., to be pulished. Ormsbee, R. A.; Cornman, I., and Berger, R.: Effects of Podophyllin on Tumor Cells in Tissue Culture, Proc. Soc. Exper. Biol. & Med. **66**:586, 1947.

7. Sullivan, M.: Podophyllin, Arch. Dermat. & Syph. **60**:1 (July) 1949.

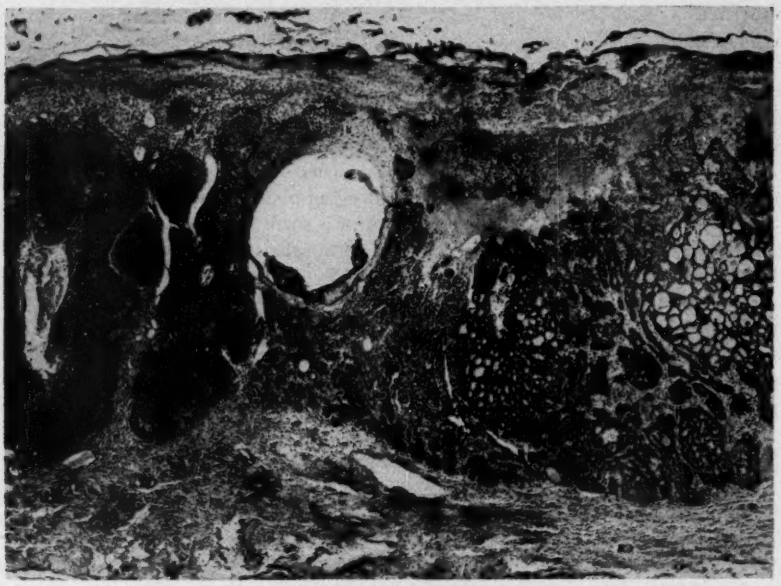


Fig. 1 (Case 1).—Low-power view, showing decided involvement of the epidermis.

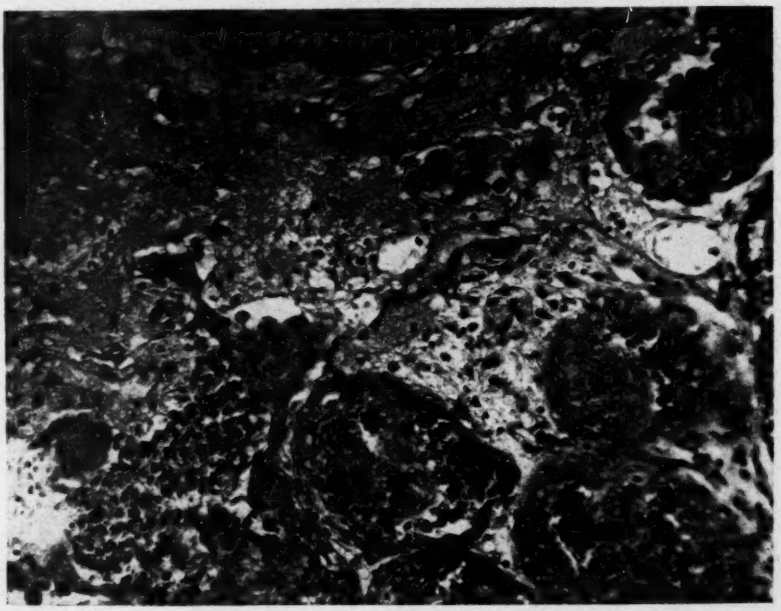


Fig. 2 (Case 1).—Medium-power view, showing pronounced effect on the epidermis with minimal changes of the superficial portions of the basal-cell masses.

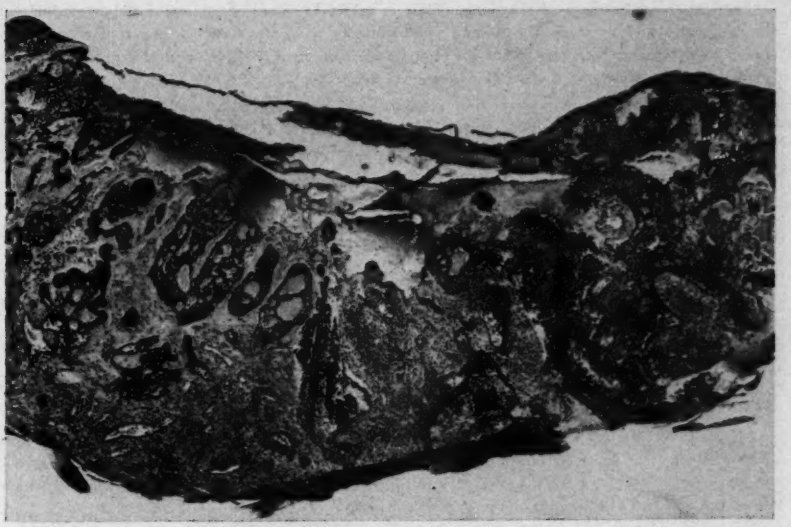


Fig. 3 (Case 2).—Low-power view, showing involvement of the epidermis with ulceration and edema.

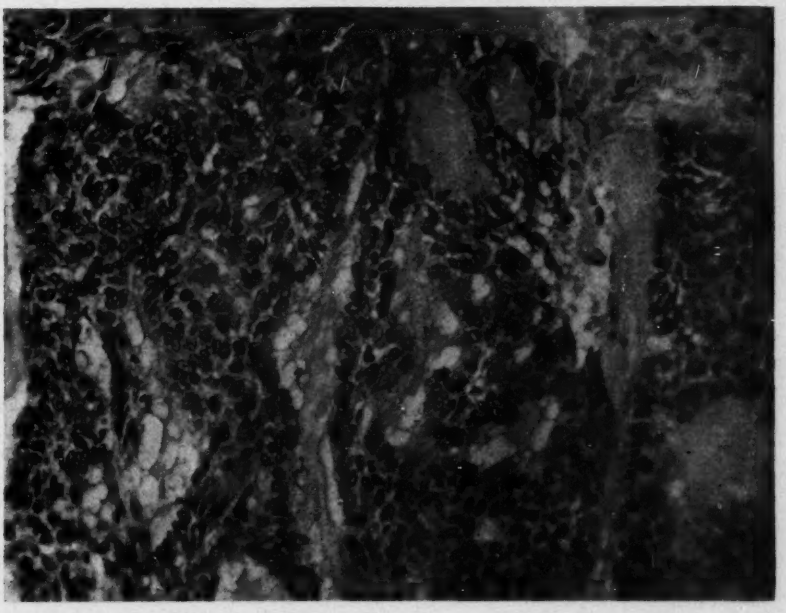


Fig. 4 (Case 2).—High-power view, showing minimal cytologic changes of the superficial portions of the masses of basal-cell epithelioma.

excised after applications of the drug. Thus it would be simple to examine the treated lesion histologically and to study the minute cytologic effects of the drug on the tumor mass. In order to determine both any existing cytologic changes and any evidence of regression of the growth we employed the three following techniques:

1. A 25% suspension of podophyllum resin in liquid petrolatum was applied daily to the lesion for one week. The lesion was then excised on the eighth day and studied histologically.

2. A 25% suspension of podophyllum resin in liquid petrolatum was applied on two successive days. The lesion was excised on the third day and examined microscopically.

3. A 25% solution of podophyllum resin in 95% alcohol was rubbed into the lesion three times a day on two successive days. The lesion was excised on the third day and histologic studies performed.

In all, 20 basal-cell epitheliomas were treated. Several of the tumors were clinically ulcerated, but the majority were small and uneroded.

HISTOLOGIC OBSERVATIONS

We examined sections from 20 cases of basal-cell epitheliomas, and the following are reports on representative sections:

CASE 1.—The epidermis was thinned along the outer thirds of the section. The section was ulcerated in the center. The thinned portion of the epidermis presented a basket-weave arrangement of the cell walls with considerable swelling of the cytoplasm, which stained poorly in many areas. The cytoplasm was absent in some of the cells. Some of the nuclei were pyknotic, and some were larger than normal, but their intranuclear chromatin stained much paler than usual. In some of the cells the nucleus had disintegrated completely, with fragments scattered in various parts of the cell. The latter cells had irregularly outlined cell walls, and the intercellular bridges were absent ("podophyllum cells"). In the center there were irregular but well-defined cystic masses which were broken down toward the surface. In the cystic zone many of the tumor cells had disintegrated completely and much fragmentation of nucleus and cytoplasm might be observed. Other cells revealed an eosinophilic tendency of the cytoplasm. The nucleus of these eosinophilic cells appeared swollen and presented a darkly staining intranuclear network. Scattered mitoses might be observed. In the depths of the tumor mass the basal cells revealed no change. The subepidermal vessels were dilated and congested, and a diffuse but mild, nonspecific cellular reaction was present throughout.

CASE 2.—Considerable ulceration and fragmentation of the epidermis were present throughout the section. Cells without nuclei, others with swollen, pale-staining vesicular nuclei, and still others with fragmented nuclear detritus might be observed. "Podophyllum" cells were present. Pyknotic nuclei and scattered mitoses were noted. The affected cells were those near the surface, particularly near the ulcerated zone. The deeper basal cells were unaffected. The connective tissue was quite edematous, and a diffuse, nonspecific cellular infiltrate might be observed.

CASE 3.—Ulceration with some disintegration of the epidermis adjacent to the ulcerated zone was noted. Irregular but well-defined basal-cell masses were present in the upper part of the corium. Their borders facing the surface were somewhat fragmented, edematous, and irregular. Some of the cells presented disintegrated nuclear detritus and a well-defined cell wall. Others revealed pyknotic nuclei and dark-staining cytoplasm and gave the impression of corps ronds. In some the nuclei were swollen and fragmented and contained an intranuclear network; in others the nucleus was absent. In many of the cells, particularly those with accentuated walls, the intercellular bridges were absent. A diffuse, nonspecific cellular infiltration was present throughout, and considerable edema of the connective tissue network in the upper part of the corium might be noted. The vessels of the upper portion and of the midcorium were dilated, their walls edematous.

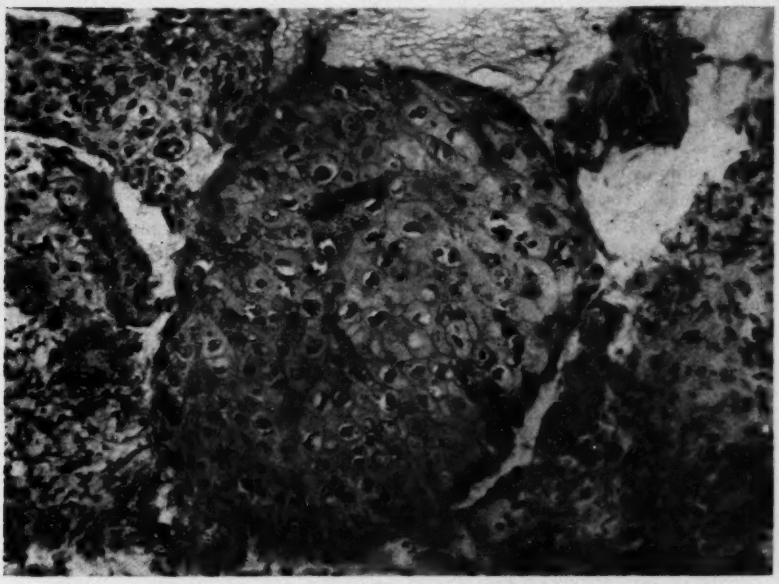


Fig. 5 (Case 3).—Photomicrograph showing decided effects of podophyllum on the epidermis.

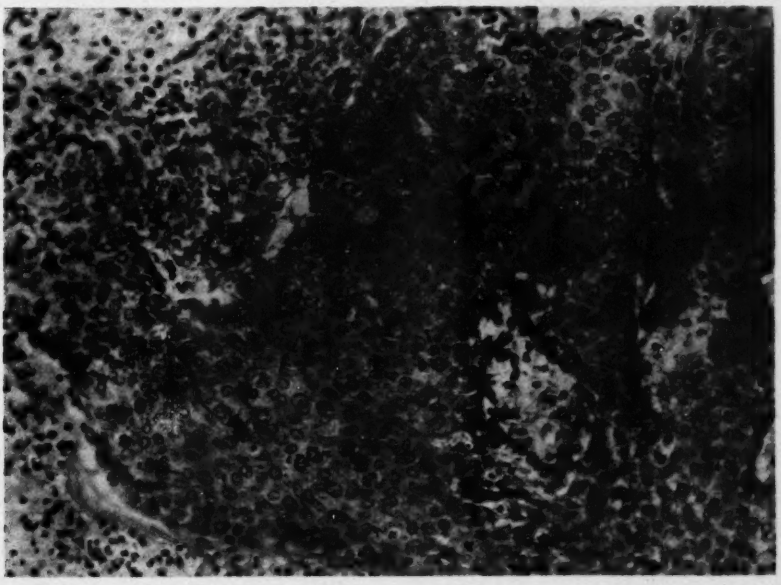


Fig. 6 (Case 3).—Photomicrograph showing the basal-cell masses with minimal cytologic changes.

COMMENT

The decided cytologic effects on the epidermis following the application of podophyllum, as noted in our cases, confirmed the descriptions by Sullivan. These changes, however, were not observed in the underlying basal-cell tumor. Our results indicated that within a period of two to seven days and with the techniques which we employed, uneroded basal-cell epithelioma resists the action of podophyllum and presents minimal cellular changes in the superficial layers of the tumor mass. While these changes are more pronounced in eroded or ulcerated basal-cell epitheliomas, they are limited to the superficial layers of the latter. Preliminary maceration, superficial curettage, and prolongation of the period of contact with the drug might influence the penetration, resulting in a greater and more desirable cellular response. Further study is required to determine the possible influence of these factors.

In an article published recently Sullivan [8] reported his experiences in treating 20 epitheliomas of the skin with podophyllum resin. Twelve of these were basal-cell carcinomas; seven, intraepidermal carcinomas, and one, a prickle-cell carcinoma. Satisfactory clinical results were obtained in all but one. Podophyllum resin 25% suspended in mineral oil, or 20% in alcohol, was applied. Various treatment schedules were tried, ranging from two applications in seven days to 50 applications in three months. Sullivan found the most satisfactory technique to be 10 to 20 applications in three weeks. The most rapid disappearance occurred in 10 days; the slowest, in three months.

We obtained no cures or appreciable clinical improvement in any case. Sullivan,[9] in commenting on his recent article, states that after follow-up of the apparently cured cases, it was observed that the majority of the growths had recurred and that it is most probable that in time this number will increase.

A technique for treating basal-cell epitheliomas with podophyllum is discussed.

Twenty cases of basal-cell epithelioma were treated with podophyllum resin in mineral oil or in alcohol for a period of two to seven days. No regression or cures were observed in any case.

Histologic examination of the excised treated tissue revealed either no cytologic changes or only minimal ones in the basal-cell tumors. The overlying epidermis, however, showed the profound cellular alterations described by Sullivan and co-workers, confirming their results.

The uneroded basal-cell epithelioma is resistant to the action of podophyllum. The application of the latter over a period up to seven days was insufficient to bring about a cure of any of the basal-cell epitheliomas which we treated.

1840 Grand Concourse, New York 57 (Dr. Sims).

2167 81st St., Brooklyn 14 (Dr. Pensky).

8. Sullivan, M.: Treatment of Cutaneous Carcinoma with Podophyllin: Preliminary Note, Bull. Johns Hopkins Hosp. **85**:200-203, 1949.

9. Sullivan, M.: Personal communication to the authors.

SQUAMOUS-CELL EPITHELIOMA THAT SIMULATES SARCOMA

LAURENCE J. UNDERWOOD, M.D.
HAMILTON MONTGOMERY, M.D.
AND
ALBERT C. BRODERS, M.D.
ROCHESTER, MINN.

WE WISH to report on a group of 40 Mayo Clinic cases in which the pathologic diagnosis was squamous-cell epithelioma of the skin with features of sarcoma. This series does not include any cases of epithelioma on the lip in which the pathologic picture simulated sarcoma, of which we have seen several instances. In the majority of the cases the histopathologic changes simulated those of fibrosarcoma, although in a few there were observations suggestive of other types of sarcoma, hemangioendothelioma, and nonmelanotic melanoepithelioma. The clinical appear-

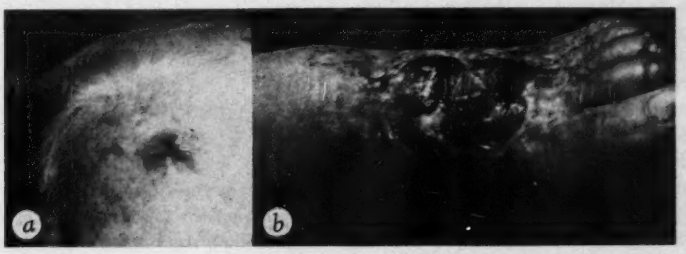


Fig. 1.—(*a*) Epithelioma, of six months' duration, from the forehead, which had recurred after simple excision. No irradiation was given. Histologically, the growth was a Grade 4 squamous-cell epithelioma that simulated a fibrosarcoma (see Fig. 2*d* and *e*). (*b*) Ulceration and radiodermatitis superimposed on chronic eczema. Histologically, the lesion was a Grade 4 squamous-cell epithelioma that imitated a fibrosarcoma (see Fig. 2*a*.)

ance of this group of neoplasms is not diagnostic per se, and frequently the lesions may present features of a granuloma rather than features of an epithelial neoplasm (Fig. 1). In addition to the 40 cases encountered at the clinic, one of us (H. M.) has seen 12 additional specimens of tissue sent in from the outside which revealed the features of squamous-cell epithelioma that simulates fibrosarcoma and which, in many instances, had been erroneously diagnosed as sarcoma.

Fellow in Dermatology and Syphilology, Mayo Foundation (Dr. Underwood). From the Section on Dermatology and Syphilology (Dr. Montgomery) and the Division of Surgical Pathology (Dr. Broders), Mayo Clinic.

Abstract, with additions, of thesis submitted by Dr. Underwood to the Faculty of the Graduate School of the University of Minnesota in partial fulfillment of the requirements for the degree of Master of Science in Dermatology and Syphilology.

CLINICAL FEATURES

The age of the patient at the time the epithelioma began and many other clinical data paralleled those for ordinary squamous-cell epithelioma of the skin. These and other statistical data are tabulated in the thesis on which this paper is based and will not be given here.

A solitary lesion was found at the time the patient was examined at the clinic in about three fourths of the cases. In the other fourth, in the majority of which the patients did not have radiodermatitis, there were multiple lesions. One patient had metastatic lesions on the trunk as a result of squamous-cell epithelioma of the larynx. Sixty-three per cent of the patients had lesions on the head or neck. Eleven patients (28%) had clinical evidence of chronic radiodermatitis, which preceded the initial malignant transformation in at least nine of this group. There was a history of previous injury or infection before the development of the epithelioma in several of the cases. The diameter of the lesions varied from 2 to 6 cm. in 42% of the cases and was less than 2 cm. in 50%. Practically all the patients who died had lesions less than 6 cm. in diameter. The duration of the lesion when the patient was first seen at the clinic was less than a year in 50% of the cases.

The clinical appearance of the lesions in general suggested a malignant growth, most frequently an epithelioma. The clinical diagnoses included epithelioma in 29 of the 40 cases, sarcoma in four, metastatic carcinoma in two, endothelioma in three, pyogenic granuloma in one, and no diagnosis in one. There were various associated diseases, including two cases of syphilis and one each of eczema, Hodgkin's disease, leiomyoma, chronic lymphatic leukemia, and, later, in the last-mentioned case, an adenocarcinoma, Grade 3, of the rectum.

In regard to the clinical appearance of the lesions, 35% were nodular, while 22% were fungating and ulcerative. Others were described as erosions, granulation-like tissue, pigmented macules, and crusted lesions. A pearly border was mentioned in only six instances. The ulcers varied from being punched out to being necrotic and undermined. One lesion resembled granuloma pyogenicum. One patient with multiple skin lesions presented features suggestive of molluscum contagiosum. Another patient with multiple ulcerative lesions had had clinical diagnoses of sporotrichosis, factitial dermatitis, and undetermined granuloma, as well as epithelioma, made by different dermatologists and had been the subject of a brief report by one of us.[1]

Of 13 cases in which a pathologic diagnosis was made prior to the time the patient came to the clinic, in the majority the diagnosis was some type of sarcoma, in two it was malignant disease without designation as to type, in two it was benign disease, and in two it was a combination of sarcoma and epithelioma.

HISTOPATHOLOGIC CHARACTERISTICS

The 40 cases included in this study were selected on the basis of the histopathologic picture that resembled that of sarcoma. The specimens were taken from a collection of epitheliomas in the Section on Dermatology and Syphilology and those studied by one of us (A. C. B.) in the Division of Surgical Pathology. We, therefore, cannot state the actual incidence of this form of anaplastic epithelioma. Spindle-shaped epithelial cells are not uncommon in various types of epithelioma, although

1. Montgomery, H.: Epitheliomas of the Arm Simulating Endothelioma, Sarcoma, and Sporotrichosis: Two Unusual Cases, M. Clin. North America **19**:605-610 (Sept.) 1935.

in the majority of the specimens there are sufficient typical features to prevent confusion with sarcoma and other neoplasms. These readily recognized squamous-cell epitheliomas were omitted from this study.

Twenty-seven of the lesions from our series of 40 cases were classified as Grade 4 squamous-cell epithelioma, although in five specimens it was difficult to distinguish, with certainty, between fibrosarcoma, nonmelanotic melanoepithelioma, hemangioendothelioma and squamous-cell epithelioma. Nine lesions were classified as Grade 3 squamous-cell epithelioma, three as Grade 2 squamous-cell epithelioma, and one as sarcoma. A review and observation of further sections of this last lesion revealed it to be a Grade 4 squamous-cell epithelioma.

Besides the diagnoses given in the preceding paragraph, one specimen closely simulated leiomyosarcoma, two simulated rhabdomyosarcoma, two fibromyxosarcoma, and 2, nonmelanotic melanoepithelioma. The final pathologic diagnoses, however, were as given in the preceding paragraph, the diagnosis being arrived at independently by all three of us, often only after study of multiple sections in order to determine the origin of neoplastic cells from the epidermis or to find other identifying features, such as an occasional pearl formation. Sections were stained with hematoxylin and eosin, Van Gieson, elastin H, and, finally, Maresch-Bielschowsky silver stain for reticulum or lattice fibers.

Changes in the epidermis were compatible with the clinical characteristics of the lesion (Figs. 2 and 3). There was a varying degree of hyperkeratosis and acanthosis. Spongiosis with vesicle formation occurred especially in cases of radiodermatitis. In these cases there was other histologic evidence of radiodermatitis.

At sites of ulceration there was an inflammatory reaction characterized by the presence of polymorphonuclear leukocytes, lymphocytes, plasma cells, occasionally eosinophils, and the foreign-body type of giant cells. In a few lesions there was formation of infected granulation tissue.

There was increased vascularity both within and outside the tumor, giving rise to changes such as are seen in hemangioendothelioma or angiosarcoma. The close relationship of the neoplastic cells with the vessels was striking. In a few specimens hemorrhage was noted in the tumor.

The larger vessels showed proliferative and degenerative changes, especially in the cases in which there was radiodermatitis.

Collagen fibers were homogenized and fibrosed in one quarter of the cases. The elastic fibers were decreased or absent in the region of the tumor. Merging of collagen and elastin to form basophilic-staining collacin occurred in one quarter of the specimens, all of which were from the face. The collacin was present at the margin of the tumor. The dermal appendages were absent in the specimens from the sites of radiodermatitis and were decreased in most other specimens.

The majority of the neoplastic cells extended into the deep part of the cutis or subcutaneous tissues. There was no tendency to encapsulation of the tumor such as may be seen in some fibrosarcomas. The growth often extended well beyond the margin of the ulcerated epidermis.[2] The tumors showed many abnormal mitotic figures of bizarre shapes occurring both in the epidermis and deeper in the cutis. Some tumors had many more mitotic figures than did others even though the mor-

2. Broders, A. C.; Hargrave, R., and Meyerding, H. W.: Pathological Features of Soft Tissue Fibrosarcoma: With Special Reference to the Grading of Its Malignancy, Surg., Gynec. & Obst. **69**:267-280 (Sept.) 1939.

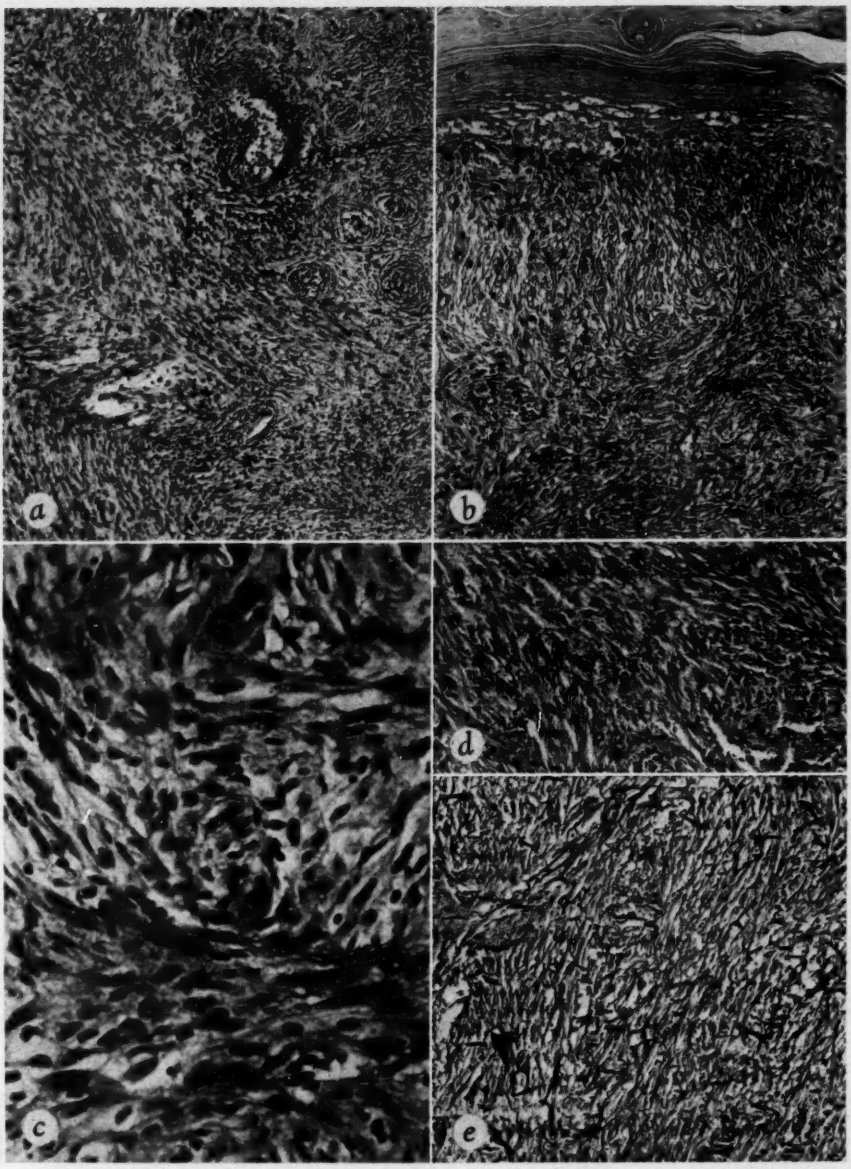


Fig. 2.—(*a*) Same case as in figure 1*b*; squamous-cell epithelioma, Grade 4, that simulated fibrosarcoma. Note the spindle-shaped malignant cells with degenerating blood vessels and surrounding inflammatory infiltrate (hematoxylin and eosin, × 90). (*b*) Squamous-cell epithelioma, Grade 4, that simulated fibrosarcoma. The section is from a lip lesion following irradiation. Note the origin of the spindle-shaped malignant cells from the epidermis, with the loss of a distinct basal-cell layer (hematoxylin and eosin, × 100). (*c*) Squamous-cell epithelioma, Grade 4. The section is from an untreated lesion on the forehead, of four months' duration, which clinically showed no features of malignancy. Note the highly undifferentiated squamous cells that simulate sarcoma cells (hematoxylin and eosin, × 400). (*d*) Same case as in Figure 1*a*. Note the anaplastic spindle-shaped epithelioma cells (hematoxylin and eosin, × 100). (*e*) Same case as in *d*. Note the lattice fibers intimately associated with malignant epithelial cells (Maresch-Bielschowsky stain, × 100).

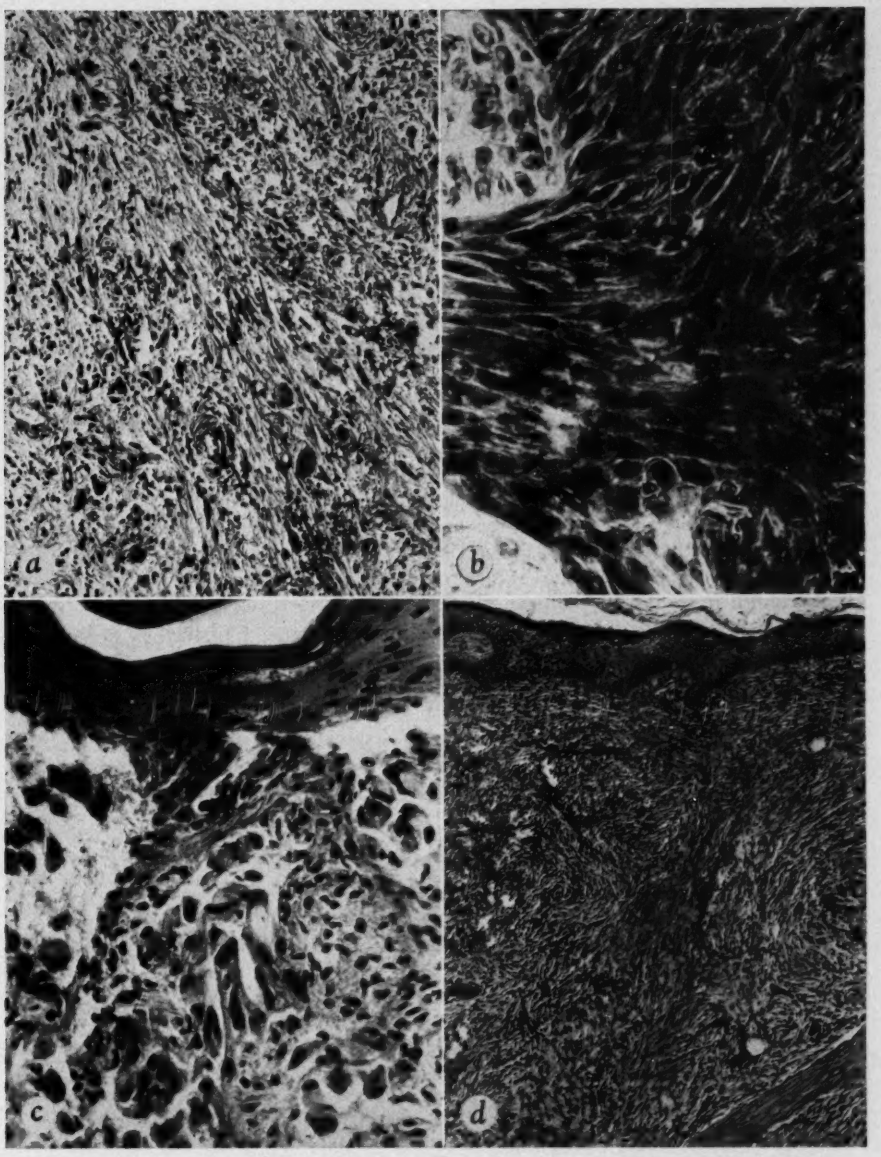


Fig. 3.—(*a*) Squamous-cell epithelioma, Grade 3, that imitates not only sarcoma but also hemangioma and rhabdomyosarcoma. The section is from an ulcerated lesion on the leg. Note the vascularity and the giant malignant cells (hematoxylin and eosin, × 100). (*b*) Squamous-cell epithelioma, Grade 3, which simulated a leiomyosarcoma. Note the abnormal mitotic figures and the spindle-shaped malignant epithelial cells (hematoxylin and eosin, × 420). (*c*) Squamous-cell epithelioma, Grade 4, in the chest wall. Note the origin of cells from the epidermis and also the malignant giant cells that are suggestive of rhabdomyosarcoma (hematoxylin and eosin, × 400). (*d*) Typical fibrosarcoma of the skin, Grade 2, revealing a distinct basal-cell layer with spindle-shaped sarcomatous cells in the cutis (hematoxylin and eosin, × 90). This illustration is to be contrasted with Figures 2*a* through *e* and 3*a* through *c*.

phologic appearance of the cells was similar. Phenomena of individual cell keratinization, giant epithelial cells, and epithelial giant cells with hyperchromatic nuclei were not infrequently seen.

One was impressed by the marked polymorphic characteristic of the malignant cells.[3] These occurred most frequently as spindle-shaped or fusiform epithelial cells. In some specimens, there was a mixture of spindle-shaped, polygonal, oval, and round cells. The nuclei varied greatly in size. There were hyperchromatic as well as large, pale-staining, vesicular-appearing nuclei. Large acidophilic nucleoli were also seen.

Sections were stained by the silver-nitrate method of Maresch-Bielschowsky to see whether this method is valuable in distinguishing anaplastic squamous-cell epithelioma from sarcoma. Some investigators have noticed lattice fibers more commonly in sarcomatous neoplasms,[4] while others have found this technic an unreliable method of differentiation in the more anaplastic epitheliomas.[5] Of 32 specimens, 75% revealed lattice or reticulum fibers within the neoplasm in moderate to marked amount. In the remainder the fibers were scant or absent. In 63% lattice fibers were noted at the margins of the epithelioma. The cases in which there was radiodermatitis were characterized by the presence of an abundance of lattice fibers within, as well as outside, the tumor. The fibers often could be seen running in between individual cells. They varied considerably in size and were difficult to distinguish from ordinary collagen fibers, which characteristically were a lighter, grayish color. Of the three specimens of a metastatic lesion in a lymph node, two revealed an abundance of lattice fibers throughout the neoplasm.

Eleven specimens of cutaneous sarcoma of different types were studied for comparison. All but one of these revealed an abundance of lattice fibers. The lattice network seemed more prominent in sarcomatous specimens in comparison with the specimens from the squamous-cell epitheliomas. The distinction, however, was not sufficiently clear-cut to warrant using the Maresch-Bielschowsky stain to distinguish between sarcomas and squamous-cell epitheliomas.

TREATMENT AND PROGNOSIS

Before the patient came to the clinic, some surgical procedure, such as excision or an electrosurgical operation, had been employed in 57% of the cases. Four patients had used escharotics or ointments. Radiotherapy had been given for benign conditions, such as acne, eczema, and hypertrichosis, in eight cases, and the resultant chronic radiodermatitis antedated the malignant growth. Two physicians had experienced the development of occupational radiodermatitis. A total of 17 of the 40 patients had had irradiation therapy of some type either to the lesion or to the site where the epithelioma subsequently developed, and, as stated pre-

3. Kettle, E. H.: On Polymorphism of the Malignant Epithelial Cell, Proc. Roy. Soc. Med. (Sect. Path.) **12**:1-32 (April 15) 1919. Broders, A. C.: Squamous-Cell Epithelioma of the Skin: A Study of 256 Cases, Ann. Surg. **73**:141-160 (Feb.) 1921.

4. Dublin, W. B.: Reticulum, Arch. Path. **41**:299-318 (March) 1946. Foot, N. C., and Day, H. A.: The Occurrence of Reticulum in Tumors, Am. J. Path. **1**:431-443 (July) 1925.

5. Edelmann, H.: Zur Frage der differentialdiagnostischen Verwendbarkeit der Gitterfaserfärben bei Carcinomen und Sarkomen, Virchows Arch. path. Anat. **258**:317-330, 1925. Way, S. C.: Reticulum, or Lattice, Fibers: Further Studies, Arch. Dermat. & Syph. **55**:478-491 (April) 1947.

viously, 11 of these patients had definite clinical evidence of radiodermatitis. The radiodermatitis preceded by many years the development of the epithelioma.

Recurrences following treatment were common and had taken place in 50% of the cases. In 10 of the cases there were two or more recurrences.

Treatment at the clinic consisted in irradiation alone in four cases, surgical treatment alone in 13 cases, and both irradiation and surgical treatment in 19 cases. In the foregoing cases there were eight patients who had to have amputation of all or part of an extremity. Four patients returned home for treatment. Recurrence following therapy at the clinic occurred in seven of 34 traced patients, or in 21%. Clinical evidence of metastasis to regional lymph nodes was found in nine cases. Of three patients who had dissection of lymph nodes, one was alive and well 15 yr. after dissection of the inguinal nodes (Grade 3 squamous-cell epithelioma), whereas two who had Grade 3 and Grade 4 squamous-cell epithelioma, respectively, were known to be dead. Several other patients who had evidence of metastasis to the regional lymph nodes were known to have died, and still other patients had metastatic lesions later on.

Of 11 patients with radiodermatitis, three were known to be dead from other causes and eight had survived without recurrence for periods ranging from 22 mo. to 18 yr. Ten of these patients had lesions interpreted as a Grade 4 squamous-cell epithelioma that simulated sarcoma, and one had a Grade 2 squamous-cell epithelioma with fibrosarcomatous features.

Ten patients without radiodermatitis were alive and well for periods ranging from one to 15 yr. after treatment. Seven patients had a Grade 4 neoplasm, and three had a Grade 3 squamous-cell epithelioma. Six patients without radiodermatitis apparently died of the epithelioma. Three of these had a Grade 3 and three had a Grade 4 squamous-cell epithelioma. Three other patients died of other causes, and at the time of this study the status of 10 patients was unknown.

The five-year survival rate of patients with radiodermatitis as a complication compared favorably with the survival rate of those without radiodermatitis. In equal proportions of the two groups further epitheliomas developed; the grades of these ranged from 1 to 4.

In regard to the relation of the site of the lesion to the outcome of the disease, 45% of all patients with lesions on the head and neck were living five or more years after treatment at the clinic, while only 23% of the patients with the initial lesion on the extremity were alive five years later. However, several patients with involvement of an extremity had multiple and far-advanced processes when first seen.

Thirty-four of the 40 patients were heard from after they left the clinic. Fourteen of the 34 patients (41%) lived five or more years after treatment at the clinic, and 18 of the 34 patients (56%) were known to be living three or more years after they left the clinic. Of 12 patients known to be dead, six died of causes other than the epithelioma. One died of Hodgkin's disease, and one, of adenocarcinoma of the rectum and chronic lymphatic leukemia. It is believed that many of the patients may have died of epithelioma, as they had multiple lesions and the condition was far advanced when they were seen at the clinic. It was difficult to correlate the pathologic with the clinical observations. The majority of those who survived had a highly malignant Grade 4 squamous-cell epithelioma that imitated fibrosarcoma. Those who were known to have died had multiple lesions, either Grade 3 or Grade 4.

On further analysis of the data on the 40 patients, the prognosis in the case of the solitary lesions seemed to be more favorable than the pathologic grade of malignancy would suggest. In our series the percentage of patients with a five-year survival period was higher than that which was observed in a group of patients with fibrosarcoma of the extremities, only 7% of whom were cured.[6]

COMMENT

There is confusion in the literature in regard to terminology and the nosologic grouping of squamous-cell epitheliomas simulating sarcomas. Squamous-cell epithelioma that simulates other neoplasms, notably those of the sarcoma group, has been described by Brooks [7] in his study of a series of 110 specimens. Ewing [8] cautioned against the direct application, to man, of the observations made in experimental studies of tumors in animals. He noted, however, evidence of change of epithelial cells into actively growing spindle cells, thereby producing a lesion which might be classified as carcinosarcoma. Much has been written about experimental work on the transplantation changes in carcinoma and sarcoma and the effects of various physical and chemical agents in inducing these neoplastic changes. Ewing has emphasized the presence of spindle-cell tumors as common in any carcinoma and regards it as strong presumptive evidence of altered epithelium. Others do not believe that this assumption can be held in the light of experimental evidence.[9]

Martin and Stewart [10] described eight cases of spindle-cell carcinoma, which represented less than 1% of all their skin epitheliomas. They expressed the belief that spindle-cell carcinoma is a variety of scar-tissue carcinoma, the most frequent exciting agent being x-irradiation. They found that the most frequent site was the face; despite wide surgical excision there was a tendency to recurrence, and 50% of their patients had died. Pack [11] emphasized that spindle-cell epidermoid carcinomas were notably radioresistant. Saphir and Vass [12] expressed the idea that the great majority of so-called carcinosarcomas are carcinomas with alteration of cellular structure due to chronic inflammatory changes or occasionally to close approximation of two unrelated tumors of mesenchymal and epithelial origin. One of us [1] has studied several cases of epithelioma which initially appeared to be sarcoma or endothelioma. Sachs and his associates [13] reported the characteristics of

6. Broders, Hargrave, and Meyerding.[2] Myerding, H. W.; Broders, A. C., and Hargrave, R. L.: Clinical Aspects of Fibrosarcoma of the Soft Tissues of the Extremities, Surg., Gynec. & Obst. **62**:1010-1019 (June) 1936.

7. Brooks, S. M.: Carcinoma Which Simulates Sarcoma: A Study of 110 Specimens from Various Sites, Arch. Path. **36**:144-157 (Aug.) 1943.

8. Ewing, J.: Neoplastic Diseases: A Treatise on Tumors, ed. 4, Philadelphia, W. B. Saunders Company, 1940, pp. 268-334; 886-911; 1050-1051; Pathological Aspects of Some Problems of Experimental Cancer Research, J. Cancer Res. **1**:71-86 (Jan.) 1916.

9. Foulds, L.: The Histological Analysis of Tumours: A Critical Review, Am. J. Cancer **39**:1-24 (May) 1940.

10. Martin, H. E., and Stewart, F. W.: Spindle-Cell Epidermoid Carcinoma, Am. J. Cancer **24**:273-298 (June) 1935.

11. Pack, G. T.: Treatment of Cutaneous Epithelioma, Arch. Dermat. & Syph. **53**:576-585 (June) 1946.

12. Saphir, O., and Vass, A.: Carcinosarcoma, Am. J. Cancer **33**:331-361 (July) 1938.

13. Sachs, W.; Sachs, P. M.; Howell, J. B., and Leiby, A.: Anaplastic Epithelioma, Arch. Dermat. & Syph. **59**:263-276 (March) 1949.

anaplastic epithelioma that are to be distinguished from those of basal-cell or prickle-cell epithelioma, but they did not discuss the relation of anaplastic squamous-cell epithelioma that simulates sarcoma.

Twenty-eight cases of cutaneous sarcoma have been reported by Epstein,[14] who experienced difficulty in ruling out epithelioma. He stressed that clinical features and observation, together with pathologic findings, were necessary for one to arrive at a correct diagnosis. In one of his cases there was a fibrosarcoma adjacent to a squamous-cell epithelioma in an area of radiodermatitis. In the majority of Epstein's cases the lesion was a fibrosarcoma of the extremity or trunk, and there was a mortality rate of 54%. Early adequate excision proved the most successful method of therapy. One of us [15] has expressed the belief that so-called sarcoma arising in an area of radiodermatitis is actually squamous-cell epithelioma which imitates sarcoma. In our experience, practically all neoplasms that develop on the basis of radiodermatitis have been frank squamous-cell epitheliomas, Grades 1 to 4, many of which have simulated sarcoma. The development of basal-cell epithelioma in an area of radiodermatitis is uncommon.

Strauss [16] recently reported the occurrence of spindle-cell epidermoid carcinoma in five patients who had never been treated with roentgen rays. He hypothesized that factors not inherent in the cells themselves accounted for the pathologic appearance of these tumors and expressed the idea that compression of the tumor was an important cause, the compression sometimes, but not often, being the result of radiodermatitis.

Sims and Kirsch [17] reported two cases of chronic radiodermatitis with which was associated a spindle-cell epidermoid epithelioma that simulated a sarcoma. Probably many cases have been reported in the literature, especially the foreign literature, of sarcoma superimposed on chronic radiodermatitis in which the diagnosis was questionable and which probably represented a squamous-cell epithelioma that simulated a sarcoma.[18]

Other authors [19] have said that there may be an intimate association of carcinoma and sarcoma in the same lesion, which can be properly classified as a carcinosarcoma. The subject remains a controversial one.

---

14. Epstein, E.: Sarcoma Involving the Skin, Arch. Dermat. & Syph. **60**:1130-1139 (Dec.) 1949.

15. Montgomery, H.: Pathologic Histology of Radiodermatitis, in MacKee, G. M., and Cipollaro, A. C.: X-Rays and Radium in the Treatment of Diseases of the Skin, ed. 4, Philadelphia, Lea & Febiger, 1946, pp. 263-295.

16. Strauss, M. J.: Spindle Cell Epidermoid Carcinoma: Report of 5 Cases in Patients Who Had Never Been Exposed to Roentgen Rays, Arch. Dermat & Syph. **61**:633-645 (April) 1950.

17. Sims, C. F., and Kirsch, N.: Spindle Cell Epidermoid Epithelioma Simulating Sarcoma in Chronic Radiodermatitis, Arch. Dermat. & Syph. **57**:63-68 (Jan.) 1948.

18. Blom-Ides, C.: Sarcoma in Röntgenoderma, Acta dermat.-venereol. **30**:47-49, 1950. Michalowski, R.: Pseudo-Sarcome surlupique, Acta dermat.-venereol. **26**:353-383 (March) 1946. Gütig, Karl: Sarkombildung in der Narbe nach exstirpiertem Röntgenkarzinom, Strahlentherapie **59**:687-689, 1937.

19. Grimes, O. F., and Bell, H. G.: Carcinosarcoma, California Med. **69**:282-284 (Oct.) 1948. Hecker, H.: Ein Fall von Karzino-Sarkom der linken Halsseite, Deutsche Ztschr. Chir. **237**:177-179 (Sept. 13) 1932. Bösenberg, M.: Über Carcinomsarkome, Ztschr. Krebsforsch. **36**:416-441, 1932.

SUMMARY AND CONCLUSIONS

A study has been made of the records and pathologic specimens in 40 cases in which the pathologic diagnosis of squamous-cell epithelioma with features of sarcoma was made. The clinical features of these cases were not sufficiently distinctive to enable one to make a prediction of the histopathologic features of the lesions encountered. The tumor usually appeared as a nodule, an ulcer, or, occasionally, a fungating lesion and occurred most frequently on the head and less frequently on the extremities. The majority of the patients presented a solitary lesion, but multiple metastatic cutaneous, glandular, and visceral metastatic lesions sometimes appeared subsequently.

An accurate classification of this type of neoplasm often calls for the making of multiple sections and thorough study of the epidermal-dermal junction to determine the origin of the neoplasm. Because of its marked polymorphic potentialities, such an anaplastic epithelioma may be confused especially with fibrosarcoma but occasionally with nonmelanotic melanoepithelioma, hemangioendothelioma, leiomyosarcoma, and rhabdomyosarcoma, as well as other types of sarcoma. The Maresch-Bielschowsky stain revealed increase in lattice or reticulum fibers in our series; it is therefore obvious that the presence of reticulum fibers does not serve to distinguish squamous-cell epithelioma that simulates sarcoma from sarcoma. The malignancy of the majority of the tumors in our series was graded 3 or 4.

In many cases in our series a diagnosis of sarcoma had been made elsewhere. A review of the literature reveals that relatively little attention has been paid to the subject of cutaneous squamous-cell epithelioma that simulates sarcoma, especially fibrosarcoma. It is our belief that practically all neoplasms that develop after radiotherapy and that are diagnosed as sarcomas will prove, on thorough examination of multiple sections, to be squamous-cell epitheliomas. At least we cannot recall having encountered at the clinic a case of sarcoma that developed after radiotherapy.

The type of epithelioma in this series has been referred to as spindle-cell epidermoid carcinoma by Martin and Stewart,[10] and scarring has been regarded as a predisposing factor. There was a history of previous injury or infection in several cases in our series, and 11 of the 40 patients had radiodermatitis. In a number of our cases there was no antecedent treatment or scarring and no pathologic evidence of fibrous tissue, infection, or radiodermatitis.

Inadequate treatment, whether in the form of surgical measures or radiotherapy, frequently resulted in recurrence. The combination of wide surgical excision and deep electrosurgical procedures followed by irradiation seemed to offer a better prognosis. Removal of the regional lymph nodes was frequently indicated. The prognosis for those patients who had radiodermatitis with the epithelioma superimposed thereon was no worse than for those who had had no radiotherapy. Fourteen of the 34 traced patients were alive after five years. The prognosis seemed to be better when there was only a solitary lesion than when there were multiple lesions, and it seemed to be more favorable than the pathologic grade of malignancy would suggest.

PYOGENIC INFECTIONS OF SKIN: ETIOLOGIC FACTOR IN ACUTE GLOMERULONEPHRITIS OF CHILDREN

J. LAMAR CALLAWAY, M.D.
AND
HARRY B. O'REAR, M.D.
AUGUSTA, GA.

ALTHOUGH infections of the skin have been recognized as an etiologic factor in from 0 to 31% of the cases of acute glomerulonephritis for over 60 yr., infections of the upper respiratory tract usually are regarded by the majority of pediatricians, dermatologists, and general practitioners as the principal cause of nephritis in children. However, during the past four years, about half of the children (36 in a total of 73) admitted to Duke Hospital with acute glomerulonephritis had not had an upper-respiratory-tract infection which could be implicated but had had a preceding superficial pyoderma.

In 1940 Futcher [1] found that the reported incidence of glomerulonephritis following skin infection varied from 0 to 28%. Several investigators [2] in the intervening nine years have recorded the incidence of skin infections preceding acute glomerulonephritis to be from 4 to 31%. Ta Sen Suen [3] reported a large series of Chinese children who had impetigo contagiosum preceding the onset of nephritis. Studies of individual patients or small series of patients have appeared in foreign medical journals.

The criteria for inclusion of the 36 patients in this series were that these children had a pyogenic infection of the skin and an absence of upper-respiratory-tract infection preceding the onset of the symptoms of nephritis. Children whose history suggested subacute or chronic nephritis were not included in this series.

All the children in this study were from north Carolina, southern Virginia, or northern South Carolina, most of them from rural areas or small towns. Of the 36 children, 26 were Negro, nine were white, and one was an Indian. Since hospital admissions of white children exceed those of Negro children in a ratio of 4:1, the high incidence in the Negro is significant. Several possible explanations for this high incidence include the Negroes' low economic status, lack of good hygiene, and

From the Department of Dermatology and Syphilology and the Department of Pediatrics, Duke University School of Medicine, and Duke Hospital.

Read before the Section on Dermatology and Syphilology at the Ninety-Ninth Annual Session of the American Medical Association, San Francisco, June 29, 1950.

1. Futcher, P. H.: Glomerulonephritis Following Infections of the Skin, Arch. Int. Med. **65**:1192-1210 (June) 1940.

2. Hayman, J. M., Jr., and Martin, J. W., Jr.: Acute Nephritis: Review of 77 Cases, Am. J. M. Sc. **200**:505-514, 1940. Burke, F. G., and Ross, S.: Acute Glomerulonephritis: A Review of 90 Cases, J. Pediat. **30**:157-170, 1947.

3. Ta Sen Suen: Impetigo-Nephritis in Children, Nat. M. J. China **30**:222-224, 1944; abstracted, Quart. Rev. Pediat. **3**:421, 1948.

reluctance to seek medical attention for an apparently minor illness. The average age of the 36 children was 7½ yr. (range, 2 to 13 yr.). The greatest incidence was between 5 and 9 yr.

Twenty-six of the 36 patients had impetigo contagiosum, five had secondarily infected scabies, three had secondarily infected chicken pox, one was given only the diagnosis of pyoderma, and one had cellulitis of the right leg. The average duration of the skin lesion before the onset of the nephritis was 23 days; the longest was 45 days, and the shortest was seven days.

Bacterial cultures from the skin lesions of 11 patients revealed a hemolytic Micrococcus aureus in all 11; in eight of the 11 there was a concomitant beta-hemolytic Streptococcus present. In three patients a hemolytic M. aureus was cultured from the skin and from the urine.

Particular attention was given to the treatment of the pyogenic skin lesions before the onset of the nephritis because of the widespread use of mercurial ointments and the known toxicity of mercurials for the kidney. In no instance could mercurial ointments be specifically incriminated, and in most patients no treatment of any kind had been given to the skin lesions.

The presenting symptom was edema in most of the patients, although in two persons the disease was diagnosed incidentally on a clinic visit and one patient was admitted because of the onset of convulsions.

On admission the average blood pressure of the 36 patients was 156 systolic and 108 diastolic. The average blood pressure at the time of discharge was 102 systolic and 68 diastolic. Nonprotein-nitrogen determination on 33 of the 36 patients revealed an average of 67 mg. per 100 cc. on admission or during the height of their illness; the average amount of nonprotein nitrogen on discharge was 33 mg. per 100 cc. During hospitalization, there was an average weight loss of 4.8 kg. Of 19 patients on whom electrocardiographic studies were carried out, seven showed some degree of abnormality. Other laboratory data, which included the amount of hemoglobin, the total white-blood-cell count with differential count, the erythrocyte-sedimentation rate, the amount of total protein with albumin and globulin fractionation, carbon-dioxide-combining power, serum-cholesterol level, and results of daily urinalyses, revealed no striking difference from the data collected on patients having nephritis following upper-respiratory-tract infections. Complications encountered were congestive heart failure, pneumonia, encephalopathy, and convulsions. One of the 36 patients died. The average hospitalization period was 12 days, the longest being 27 days and the shortest, six days.

Treatment in the hospital was with the application of wet compresses, antiseptic paints, and ointments locally; a salt-free diet; oral, intramuscular, or intravenous administration of magnesium sulfate; intramuscular injection of penicillin, and other supportive measures.

When the increased incidence of pyoderma and the decreased incidence of upper-respiratory-tract infections preceding acute glomerulonephritis was noted, certain questions were raised. Could the use of the sulfonamides and penicillin in the treatment of upper-respiratory-tract infections have interrupted or interfered with the reaction leading to the development of nephritis? Could the lack of use of sulfonamides or penicillin in the treatment of the pyodermas noted in this series

be implicated in the higher incidence of nephritis? Could the high incidence of pyodermas preceding nephritis be a local and temporary observation?

SUMMARY

1. Thirty-six of 73 children with acute glomerulonephritis admitted to Duke Hospital from 1946 to 1950 had a preceding pyogenic infection of the skin without evidence of a precipitating upper-respiratory-tract infection or other causal factor.

2. The importance of superficial pyogenic infections of the skin, their early recognition, and appropriate treatment to prevent the development of a significantly high percentage of acute glomerulonephritis in children is emphasized.

ABSTRACT OF DISCUSSION

DR. EVERETT R. SEALE, Houston, Texas: The etiologic importance of foci of infection in many diseases of the skin is appreciated by all dermatologists. Drs. Callaway and O'Rear have called to our attention the significance of infections of the skin in systemic disease.

The ocurrence of acute glomerulonephritis following a pyogenic infection was brought home to me about 18 mo. ago. At that time I saw a healthy 33-yr.-old man with a mild pyoderma of the hands. Three weeks later he died of acute glomerulonephritis.

After reading Dr. Callaway's paper I reviewed the records of all cases of acute glomerulonephritis occurring in children admitted to two private and one charity hospital in Houston, Texas, since Jan. 1, 1946. Patients in 61 cases had been admitted to the private hospitals. Four of these patients had had pyoderma prior to the development of nephritis, an incidence of 6.5%. In the great majority an upper-respiratory-tract infection had antedated the nephritis.

During a similar period patients in 44 cases were admitted to the charity hospital, and in 14 of these pyoderma was present prior to the development of nephritis, an incidence of almost 32%.

Our findings parallel those of Drs. Callaway and O'Rear in that the majority of cases were seen in the low-income group and that the duration of the skin infection was two to four weeks prior to the development of nephritis. It was interesting to note that in 12 of our 18 cases the pyogenic process involved the lower extremities.

The importance of curing pyogenic infections of the skin as quickly as possible is apparent, and certainly with the newer antibiotic preparations we have at our command an early cure can be accomplished.

DR. NORMAN EPSTEIN, San Francisco: I had the opportunity of reviewing this paper previous to this meeting, and so I rise to comment on this important contribution to the management of pyogenic infections of the skin.

The occurrence of so many cases of acute nephritis complicating a pyogenic infection of the skin over such a short period as reported by the authors rather amazed me because it has been the experience of my associates and me that instances of nephritis following superficial impetigo are uncommon. Perhaps we overlook a certain number of these complications that occur in a mild form. Abnormal findings in the urine, which many times apparently clear spontaneously, do occur during the course of these infections.

In the management of these patients, perhaps we are remiss in the fact that we tend to examine the urine only once and then usually look for the presence of diabetes. Perhaps in these patients the urine should be examined before they are discharged from our care.

Another point in the management of impetigo and pyodermatitis concerns the use of the antibiotics. We are hesitant to employ any of the antibiotics unless the patient gives evidence of a constitutional reaction, such as fever or malaise. Dr. Callaway and Dr. O'Rear regard evidence of kidney irritation as an indication for the administration of penicillin.

A rather interesting experience has ocurred during this week of the convention. A physician en route from Chicago became very ill when he reached Salt Lake City. He had very severe fulminating glomerular nephritis. When he arrived here, he was hospitalized. The internist corroborated the fact that he had very severe hemorrhagic nephritis. This nephritis originated

secondary to an infectious eczematoid dermatitis behind the patient's left ear. This case illustrates that pyoderma and skin infections may be complicated by serious injections of internal organs.

Other conditions besides nephritis follow pyogenic infections. Diffuse scleroderma, scleredema, and other disorders of that group may follow these infections.

Dr. Callaway points out that nephritis developed in those patients who had not been treated for their infections. He also showed that the use of mercurials locally did not contribute to the development of the nephritis.

DR. J. GARDNER HOPKINS,† New York: I should like to ask Dr. Callaway whether, in these cases, there was concomitant tonsillitis or other infection of the throat. I suppose such a condition was ruled out.

These observations draw attention to the fact that not only may the skin show reactions to internal disease but also the internal organs may show reactions to skin disease. In some of these cases, staphylococci were obtained, and I assume they were shown to be coagulase-positive. The role of the Staphylococcus in glomerulonephritis has been little emphasized. The early writers, Levaditi and Neisser, and others believed that renal lesions produced by Staphylococcus toxin were essentially infarcts, but it has been shown by Rigdon and by Von Glahn and Weld that Staphylococcus toxin in appropriate doses can cause lesions of the glomerular capillaries and epithelium of the tubules without damaging the renal arteries sufficiently to cause infarction. It therefore seems quite possible that Staphylococcus toxin absorbed during an impetigo attack might cause glomerulonephritis.

DR. HARRY L. ARNOLD JR., Honolulu, T. H.: I noticed that the first two discussers, as well as the authors, come from areas where children spend a good deal of time out-of-doors, not very well covered by protective clothing, as they do in Hawaii; in our situation their doing so predisposes them to a pretty high incidence of superficial infections of the skin. I think it would be worth while, in pursuing this work further, to explore the possibility that we are merely dealing with a group of children who have an unusually large amount of this sort of disorder, and to exclude that possibility.

I was certainly impressed with the presentation, however, the more so because only a couple of months ago I observed a completely unexpected death on about the fourth day of treatment of impetigo in a 4-mo.-old infant being treated orally with aureomycin, which I suppose might have been expected to protect the kidneys at least as well any other form of treatment, if not better.

DR. ERVIN EPSTEIN, Oakland, Calif.: There are two points that should be emphasized. One is the thesis of the authors, namely, that skin infections can cause serious damage to the renal system. In support of this, I should like to mention three patients who died of complications of pyoderma following scabies: One had septicemia; one child's scabies was complicated by Streptococcus pneumonia and nephritis, and the third patient, an infant, acquired pustular cellulitis and when the lesion was incised had a convulsion and died.

On the other hand, I think it is very important that we should not let the preceding observation influence unduly our therapy of pyoderma. In other words, the use of antibiotics is still a comparatively dangerous thing. The incidence of sensitivity to antibiotics is high, and that sensitivity interferes with the use of these substances later at a time when they might be needed more urgently, as in septicemia, pneumonia, or meningitis.

I should like also to mention a personal series of seven patients who acquired urticaria 10 to 20 days after one or more injections of penicillin and in whom the urticaria persisted for from six to 18 months. For those reasons, and because this paper will be read by physicians who are not dermatologists, it should be stressed that the antibiotics are probably not necessary in treatment of impetigo and other superficial skin infections, and may even be dangerous.

DR. J. LAMAR CALLAWAY, Durham, N. C.: I was very much interested in Dr. Seale's observation, which parallels ours, that the highest incidence of pyogenic infection of the skin in his series is in the low-income group. I pointed out in the paper that most of our patients came from rural North Carolina and rural Virginia. They are, as Dr. Arnold suggested.

† Dr. Hopkins died on Feb. 27, 1951.

people who do not have good protection; they go around barefooted, and much of their impetigo and pyogenic infection is on the lower extremities.

In answer to Dr. Hopkins, so far as possible we eliminated from our series all patients with upper-respiratory-tract infections, sore throat, and tonsillitis, and, as far as we know, these conditions were not a factor in this series of 36 patients reported.

In answer to Dr. Epstein's remarks about the use of penicillin and other antibiotics, we have not necessarily recommended their immediate use. However, we should like to emphasize that impetigo and chronic pyodermas of the skin are important lesions that should not be ignored, and they should be "appropriately" treated, with the use of penicillin if necessary.

TREATMENT OF VESICULOEROSIVE STOMATITIS WITH AUREOMYCIN TROCHES

ALEXANDER A. FISHER, M.D.
AND
MORRIS LEIDER, M.D.
NEW YORK

VESICULOEROSIVE lesions anywhere on the mucous membranes present problems both of etiology and of therapy. Mechanical trauma; burns; primary chemical irritation; bacterial, fungous, and virus infection, and drug and contact-type eruptions, among others, are all possibilities in most cases. Clinical designations for acute eruptive pathologic conditions of the mucous membrane—e. g., infectious gingivostomatitis, stomatitis ulceromembranosa acuta, aphthous stomatitis, catarrhal stomatitis, ulcus vulvae acutum, and herpetic or dendritis ulcer (ulcus corneae)—are largely descriptive either of location or of gross pathologic features and reflect the lack of definitive information about the cause of most such disease pictures. Differential diagnosis within this group of common vesiculoerosive entities is always difficult and tends to remain vague.

For many years now it has been suspected that at least some of these diseases may be of virus causation, particularly of herpes simplex virus origin. Before the very modern era of the development of fairly good methods of detecting, identifying, and testing for viruses (growth in fertilized eggs, biopsy for discovery of inclusion bodies, titration for antibodies, animal inoculation, electron microscopy, etc.) the basis for this suspicion must have been conjecture and observation of an analogy between the appearance and course of mucous-membrane vesiculation (with resultant ulceration) and the well-known progression of herpes simplex on the epidermis. With present-day laboratory techniques the fact of virus causation for some cases of mucous-membrane ulceration has been confirmed. On the other hand, for other cases it has been in like manner denied or left an open question. Thus Blank and co-workers,[1] employing the rigorous precision techniques which have been parenthesized above, confirmed previous investigations which showed that primary herpetic gingivostomatitis is of herpes simplex virus causation but proved convincingly that the condition of recurrent aphthous ulcers, for one, certainly is not. This is not to say, however, that other viruses, as yet undetected or unidentified, may not still be causes of aphthous ulcers and many other mucous-membrane vesiculoerosive pictures. The response in some such cases to treatment with antibiotics, particularly

From the Department of Dermatology and Syphilology of the New York University Post-Graduate Medical School, Dr. Marion B. Sulzberger, chairman, and the Skin and Cancer Unit of University Hospital.

1. Blank, H.; Burgoon, C. F.; Coriell, L. L., and Scott, T. F.: Recurrent Aphthous Ulcers, Correspondence, J. A. M. A. **142**:125 (Jan. 14) 1950.

penicillin and aureomycin,[2] speaks for some sort of infectious causation, although the precise organisms may not be recognized in this manner. Even if antibiotics do not operate against a primary infecting agent in a particular case, their effect on susceptible secondary infectious agents may modify the clinical and therapeutic aspects of the whole disease complex.

In ordinary clinic or private practice there rarely are opportunities for one to perform adequate laboratory studies for virus detection and identification. There always is urgency to relieve and cure the condition. Consequently the following report relates our experience, largely favorable, with treatment with aureomycin in the form of troches in eight cases of vesiculoerosive stomatitis but offers nothing for etiologic consideration beyond the deduction that what is favorably influenced by an antibiotic is probably of susceptible microbial origin or is complicated by infectious concomitants. All our cases, except one, were clinically what may be designated as recurrent nonfebrile aphthous stomatitis (canker sores). Most patients gave clear histories of local points of pain in the mouth which quickly came to visible small erosions or ulcers.

In prescribing aureomycin troches, we made a point of stressing to the patient that the tablet was to be sucked slowly at stated intervals so that a maximum amount of the active agent might be released and retained as long as possible in the area involved.

The accompanying table is a summary of the salient clinical and therapeutic features of the cases.

COMMENT

The most conservative analysis of the results may be stated as follows:

One case showed a total failure of treatment.

In one case treatment failed because a new stomatitis, apparently the effect of aureomycin therapy, was worse than the aphthae and consequently the patient could not maintain the treatment. He did not remain with us long enough to provide an opportunity for us to try measures that might have counteracted the induced stomatitis.

One patient was cured with apparent permanence in two months. There was no recurrence upon cessation of treatment after this time.

In two cases the patients remained free of lesions so long as troches were taken regularly and constantly.

Three patients had considerable, though not complete, relief. The improvement consisted in fewer, smaller, or less painful lesions.

In short, six out of eight patients enjoyed benefit.

There were, however, complications from the therapy in more than half the cases. One patient had mild diarrhea, which subsided spontaneously. One male patient had pruritus ani, and a female patient, pruritus ani et vulvae. These conditions ceased of themselves. Two patients acquired a new stomatitis which did not show signs of self-restoration but, as will be explained later, was amenable to

2. Fisher, A. A., and Schwartz, S.: Stomatitis Ulceromembranosa Acuta Treated with Aureomycin, J. Invest. Dermat. **13**:51 (Aug.) 1949. Distelheim, I. H., and Sulzberger, M. B.: Aureomycin Employed Locally in Painful Mouth Ulcerations, ibid. **13**:115 (Sept.) 1949. Everett, F. G.: Aureomycin in the Therapy of Herpes Simplex Labialis and Recurrent Oral Aphthae, J. Am. Dent. A. **40**:555 (May) 1950.

Salient Features, Clinical and Therapeutic, of Eight Cases of Vesiculoerosive Stomatitis

Case No.	Patient, Sex, Age	Clinical Observations	Duration of Condition, Yr.	Frequency of Attacks	Number of Troches Taken Daily	Results	Remarks
1	A. N., M, 26	Several match-head- to pea-sized ulcers around gums and on buccal mucosa; pain a prominent symptom	2	Continuous	5	After two months of continuous aureomycin exhibition, no more new lesions; no recurrence on cessation of treatment	With active treatment, appearance of pain and redness in the mouth (a new stomatitis); no Monilia found on culture; condition controlled on 40 mg. of riboflavin daily in divided doses; patient also acquired pruritus ani
2	R. W., F, 35	Large ulcers of irregular, angular shapes, lima-bean-sized and covered with a dirty grayish membrane; severe pain a prominent symptom	8	Continuous, with premenstrual exacerbation	3	Nearly complete control on this dose but recurrence on less	Dramatic relief of pain from these large ulcers; patient had pruritus ani et vulvae, which cleared spontaneously
3	T. Q., M, 60	Many small, pinhead- to split-pea-sized ulcers under the plates of an edentulous mouth	20	Continuous	4-8	Total treatment failure	At first, slight improvement, but, soon after, no relief even with as many as 8 troches daily
4	A. G., M, 38	Few, scattered, very painful, and unusually deep ulcers	7	Very frequent attacks	4	Complete control on this dose but instant recurrence on less	Mild diarrhea shortly after start of treatment; though spontaneous cessation of condition shortly afterward, relation to the inception of treatment assumed
5	G. S., M, 4	Numerous, very painful, pinhead- to match-head-sized erosions; pain of mastication so severe that feeding difficult	2	Four attacks yearly	3	Partial control in this case—number of lesions not diminished, but erosions less painful and patient able to eat comfortably	While treatment continued lesions seemingly abortive, with evanescent tendency
6	L. K., M, 52	One or two large, painful ulcers at a time	8	Occasional attack	8	Treatment failure; treatment discontinued upon the development of generalized redness and pain in the mouth	Complicating stomatitis worse than the original condition in patient's opinion; culture for Monilia negative in this case also
7	A. B., F, 13	Several finger-nail-sized ulcers with an erythematous halo and accompanied with fever	9	Two severe attacks yearly	3	Good response—whereas previous episodes of weeks' duration accompanied with fever, no fever and attack lasting only 4-5 days while patient under treatment	History of acute febrile gingivostomatitis in childhood
8	R. G., F, 44	Solitary, large, finger-nail-sized ulcer	3	Frequent episodes	6-7	Size and duration of the ulcer not affected, but much less pain	No complications; treatment distinctly worth while, according to patient

counteraction. This type of stomatitis is apparently common after topical treatment with antibiotics, particularly, it seems to us, after the use of aureomycin and penicillin. It may picturesquely be termed "aureomycin or penicillin mouth." It shows itself as a bright redness of the entire oral cavity (buccal mucosa, palate, gingival sulci, etc.), beefy glossitis, perlèche, and cheilitis. The main symptom is a burning soreness.

Three possible explanations have been advanced to explain complications of these types from antibiotic therapy. They may be listed as follows:

1. The conditions are due to Monilia [3] or a preponderance of certain other microorganisms resistant to the antibiotic which supervenes because the antibiotic suppresses some of the usual flora, particularly bacteria, and in the upset floral pattern ordinarily harmless or just potentially harmful microbes flourish.

2. The conditions develop because the antibiotic interferes with the production of certain essential nutrient factors, like fractions of the vitamin B complex, or injures some enzyme system of the cells of the mucous membrane so that they are deprived of capacity to utilize something essential.

3. The conditions, particularly the stomatitis, are caused by sensitization of the mucous membrane to the antibiotic or some other component of the troche.

We tested the possibility of moniliasis in two cases, and, though the clinical picture was highly suggestive, culture was negative. While this observation does not absolutely disprove the likelihood of infection fostered by a shift in the floral balance, in our cases there is nothing beyond an appearance of infectious inflammation to support the contention.

The possibility of enzymatic disturbance or deprivation of an essential nutrient is supported by the observation of the relief enjoyed by one patient (see A. N. in Table) who took riboflavin for his complicating stomatitis. In another patient, not of this series, who acquired a similar stomatitis from penicillin troches, riboflavin exhibition also controlled the complication. If these observations are valid, then riboflavin therapy supplementing antibiotic therapy may be a means of counteracting a side effect which otherwise might make a good treatment useless. In this connection, another point that seems important to us is the dose of riboflavin, which must be high—of the order of 40 mg. daily in divided doses.

We tested the third possibility, of acquired sensitization to some component of the aureomycin troche, in one of our cases (again that of A. N.) by performing patch tests with the whole complex and with the individual constituents of the troche. The Lederle Laboratories Division, American Cyanamid Co., generously furnished us the breakdown ingredients for testing and readily supplied us with the following formula of composition of the aureomycin troche:

Aureomycin	15.0 mg.
Magnesium stearate	7.5 mg.
Peppermint oil	4.0 mg.
F D & C Yellow No. 5	0.75 mg.
F D & C Red No. 28	0.75 mg.
Acacia, as much as will suffice	

3. Harris, H. J.: Aureomycin and Chloramphenicol in Brucellosis, J. A. M. A. **142**:161 (Jan. 21) 1950. Pappenfort, R. B., Jr., and Schnall, E. S.: Moniliasis in Patients Treated with Aureomycin, Biopsy **2**:9 (June) 1950.

Patch tests with the troche as is (powdered and wetted with water) and with the individual components all elicited negative reactions. But a test with the whole complex wetted with the patient's saliva gave a positive reaction. This unexpected result led us to do a control test with the whole troche again wetted in the same manner with the affected patient's saliva but with the test performed on another subject, i. e., one without stomatitis and not on aureomycin therapy. Again a positive reaction was obtained. This surprising result is not easy to explain and requires further study, which is being pursued.

We performed another series of experiments designed to test the possibilities of sensitization and riboflavin deficiency. The basis of these procedures was the avoidance and reexposure principle. The forms of treatment and their results, which do not unequivocally resolve the mechanism of harm but nevertheless implicate aureomycin in some manner, may be listed as follows:

1. The patient was given placebo troches (prepared and furnished by the Lederle Laboratories) which looked and tasted exactly like the true aureomycin troche and contained all its ingredients except the antibiotic. While the placebo troches were taken the ulcers recurred in the mouth but no generalized stomatitis appeared.

2. The patient was then put on treatment with one true aureomycin troche and one 10 mg. tablet of riboflavin every four hours. On this regimen the ulcers promptly disappeared and no stomatitis occurred.

3. The patient was then placed on treatment with riboflavin alone. The ulcers instantly recurred.

4. The patient was given aureomycin troches alone. The ulcers quickly healed, but the stomatitis reappeared.

SUMMARY AND CONCLUSIONS

Six out of eight patients with vesiculoerosive stomatitis were benefited by topical therapy with aureomycin in the form of troches.

In two cases treatment had to be seemingly continuous and perpetual. This situation is reminiscent that with successful sulfonamide therapy in some cases of dermatitis herpetiformis and acrodermatitis continua [4] the condition is controlled so long as the chemotherapy is maintained.

In more than half the cases there were complications of the therapy, the most troublesome of which was "aureomycin mouth."

The cause of "aureomycin mouth" is not clear, but most evidence suggests that it is the result of an ariboflavinosis and that adequate doses of the riboflavin fraction of the B complex are rectifying.

4. Sulzberger, M. B.: Acrodermatitis Continua Pustulosa (Hallopeau) Treated with Sulfapyridine, Arch. Dermat. & Syph. **40**:1019 (Dec.) 1939.

PENICILLIN IN THE TREATMENT OF EXPERIMENTAL SYPHILIS OF RABBITS

VII. Penicillin "S-R" and Procaine Penicillin G in Peanut Oil with Aluminum Monostearate, Alone and in Combination with Oxophenarsine Hydrochloride (Mapharsen®) or Bismuth Subsalicylate

JOHN A. KOLMER, M.D.*

With the Technical Assistance of Anna M. Rule

PHILADELPHIA

IN THE treatment of early syphilis it is thought advisable to administer sufficient amounts of penicillin at such intervals as will not quickly establish but also maintain maximum effective blood levels of the compound in order to secure the earliest possible healing of the open lesions. Doing so is not only for the purpose of securing prompt and sustained spirocheticidal concentrations in the blood but also, more important, for producing and maintaining maximum effective concentrations in the tissues, with special reference to the foci of infection, in order to destroy treponemes recovering from the effects of the compound before they resume multiplication.

For these purposes Parke, Davis & Company have made available a combination of procaine penicillin G with buffered crystalline sodium penicillin G, designated penicillin "S-R," for intramuscular injection in aqueous suspension. When suspensions are prepared as directed with sterile water, an isotonic solution of sodium chloride, or 5% dextrose solutions, 1 cc. contains 300,000 units of procaine penicillin of controlled crystal size with 100,000 units of crystalline sodium penicillin. It is stated that in human beings single intramuscular injections of 1 cc. produce concentrations of 2 to 4 (or more) units within one-half hour with about 0.1 unit per 100 cc. of blood at the end of 24 hr., while single doses of 2 cc. may produce blood concentrations as high as 16 (or more) units within one-half hour with about 0.25 units per 100 cc. at the end of 24 hr.

Under the circumstances we have thought it advisable to determine the therapeutic activity of penicillin "S-R" in the treatment of acute syphilitic orchitis and generalized syphilis of rabbits, the latter corresponding to the secondary stage of human syphilis, including infectious cutaneous and mucocutaneous lesions. Since procaine penicillin G in aqueous and oil suspensions and in peanut oil with 2% aluminum monostearate was found approximately as effective as sodium penicillin G suspended in peanut oil and white wax,[1] procaine penicillin G in oil with aluminum

From the Institute of Public Health and Preventive Medicine of Temple University.

* Professor of Medicine and Director of the Institute of Public Health and Preventive Medicine, Temple University School of Medicine.

1. Kolmer, J. A.: The Treatment of Acute Syphilitic Orchitis and Generalized Syphilis of Rabbits with Repository Penicillin Products Alone and in Combination with Mapharsen and Bismuth Salicylate, Am. J. Syph. **34**:45 (Jan.) 1950.

monostearate was employed as a control compound. Both forms of penicillin were administered alone and in combination with oxophenarsine hydrochloride (mapharsen®) or bismuth subsalicylate, since previous investigations have shown that both of these compounds act synergistically or additively with penicillin.[2]

METHODS AND MATERIALS

For the production of acute syphilitic orchitis, rabbits were inoculated intratesticularly with the Nichols-Hough strain of Treponema pallidum. Treatment was instituted four to five weeks later in animals manifesting acute orchitis with positive results on dark-field examination.

For the production of generalized syphilis, rabbits were heavily inoculated in one testicle with the same strain of T. pallidum and castrated one week later. Treatment was instituted about 12 wk. thereafter in animals acquiring generalized lymphadenitis and cutaneous, mucocutaneous, ocular, or periosteal lesions with positive results on dark-field examination.

After the institution of treatment, clinical and dark-field examinations were made daily for three days in succession and then once a week over a total period of 70 days. Two weeks after the last doses, lymph node material was inoculated intratesticularly into fresh rabbits. These animals were kept under observation, with repeated dark-field examinations, for a period of 90 days, after which the results were evaluated.

Part of the penicillin "S-R" administered was supplied by the research department of Parke, Davis & Company, the rest being purchased in the open market. To each multiple-dose vial containing 2,000,000 units was added 4.2 cc. of a sterile saline solution, which provided 5 cc. of suspension. Further dilutions were made with the same vehicle. Suspensions were kept in a refrigerator for periods not exceeding one week. Procaine penicillin G in peanut oil with 2% aluminum monostearate (Commercial Solvents Corporation) was purchased in the open market. Both products were administered by intramuscular injection, the doses of each being in terms of units per kilogram of body weight.

The single minimal curative dose of oxophenarsine hydrochloride by intravenous injection in the treatment of acute syphilitic orchitis of rabbits is 8 to 10 mg. per kilogram.[2d, e] In single-dose treatment schedules 1.0 mg. per kilogram, corresponding to one-eighth to one-tenth the single minimal curative dose, was administered intravenously at the same time as the penicillin. In multiple-dose schedules the compound was administered in doses of 0.3 mg. per kilogram at the same time as the penicillin.

The single minimal curative dose of bismuth subsalicylate in oil, by intramuscular injection, is practically the same as that for oxophenarsine hydrochloride per kilogram of weight.[3] In single-dose treatment schedules 2.0 mg. per kilogram, corresponding to about one-fourth to one-fifth the single minimal curative dose, was administered intramuscularly at the same time as the penicillin. In multiple-dose schedules the compound was administered in doses of 0.5 mg. per kilogram at the same time as the penicillin. Bismuth subsalicylate in oil with chlorobutanol (chlorotone®, Parke, Davis & Company) was employed in all experiments.

---

2. (*a*) Kolmer.[1] (*b*) Eagle, H.; Magnuson, H. J., and Fleischman, R.: The Synergistic Action of Penicillin and Mapharsen (Oxophenarsine Hydrochloride) in the Treatment of Experimental Syphilis, J. Ven. Dis. Inform. **27**:3 (Jan.) 1946. (*c*) Kolmer, J. A.: The Synergistic or Additive Activity of Chemotherapeutic Compounds, Am. J. M. Sc. **215**:136 (Feb.) 1948; (*d*) Penicillin in the Treatment of Experimental Syphilis of Rabbits: II. The Synergistic or Additive Activity of Penicillin, Oxophenarsine Hydrochloride and Bismuth and Potassium Tartrate, Arch. Dermat. & Syph. **56**:179 (Aug.) 1947; (*e*) IV. The Synergistic or Additive Activity of Penicillin by Oral Administration with Oxophenarsine Hydrochloride ("Mapharsen") by Intravenous and Intramuscular Injection and Bismuth Salicylate by Intramuscular Injection, ibid. **57**:965 (June) 1948.

3. Kolmer, J. A.; Brown, H., and Rule, A. M.: Studies in the Bismuth Therapy of Syphilis: 1. A Comparative Study of the Toxicity and Therapeutic Activity of Bismuth Compounds Employed in the Treatment of Syphilis, Am. J. Syph., Gonor. & Ven. Dis. **23**:7 (Jan.) 1939.

RESULTS IN THE TREATMENT OF ACUTE SYPHILITIC ORCHITIS

Single Doses of Penicillin Alone.—As shown in Table 1, the single minimal curative dose of penicillin "S-R" by intramuscular injection was from 200,000 to 250,000 units per kilogram of weight. As shown in Table 2, the single minimal curative dose of procaine penicillin G in peanut oil with aluminum monostearate was from 100,000 to 200,000 units per kilogram of weight. Consequently, though peni-

TABLE 1.—*Single Doses of Penicillin "S-R" in the Treatment of Acute Syphilitic Orchitis of Rabbits*

No.	Units per Kg.	Results of Dark-Field Examinations for T. Pallidum, Days*													Results of Transfer of Lymph Nodes
		1	2	3	7	14	21	28	35	42	49	56	63	70	
1	25,000	2	1	—	—	4	4	4	4	4	4	4	4	4	Positive
2	25,000	1	1	—	—	2	4	4	4	4	4	4	4	4	Positive
3	50,000	2	±	—	—	—	—	—	—	2	2	4	4	4	Positive
4	50,000	1	—	—	—	—	—	—	—	—	1	4	4	4	Positive
5	100,000	1	—	—	—	—	—	—	—	—	—	4	4	4	Positive
6	100,000	1	—	—	—	—	—	—	—	—	—	2	4	4	Positive
7	200,000	±	—	—	—	—	—	—	—	—	—	—	2	4	Negative
8	200,000	1	—	—	—	—	—	—	—	—	—	—	—	—	Positive
9	250,000	—	—	—	—	—	—	—	—	—	—	—	—	—	Negative
10	250,000	—	—	—	—	—	—	—	—	—	—	—	—	—	Negative
11	300,000	—	—	—	—	—	—	—	—	—	—	—	—	—	Negative
12	300,000	—	—	—	—	—	—	—	—	—	—	—	—	—	Negative

* After institution of treatment: 4 indicates large numbers of actively motile spirochetes per dark field; 3, 2, 1, and ± indicate smaller numbers of spirochetes per dark field, respectively; — indicates negative results on dark-field examinations.

TABLE 2.—*Single Doses of Procaine Penicillin G in Peanut Oil with Aluminum Monostearate in the Treatment of Acute Syphilitic Orchitis of Rabbits*

No.	Units per Kg.	Results of Dark-Field Examinations for T. Pallidum, Days*													Results of Transfer of Lymph Nodes
		1	2	3	7	14	21	28	35	42	49	56	63	70	
1	25,000	2	2	1	—	—	—	2	4	4	4	4	4	4	Positive
2	25,000	2	2	2	—	—	1	3	4	4	4	4	4	4	Positive
3	50,000	2	1	—	—	—	—	—	—	—	—	1	2	2	Positive
4	50,000	2	1	1	—	—	—	—	—	—	1	1	2	2	Positive
5	100,000	1	±	—	—	—	—	—	—	—	—	—	2	2	Positive
6	100,000	1	—	—	—	—	—	—	—	—	—	—	—	—	Negative
7	200,000	±	—	—	—	—	—	—	—	—	—	—	—	—	Negative
8	200,000	1	—	—	—	—	—	—	—	—	—	—	—	—	Negative
9	250,000	—	—	—	—	—	—	—	—	—	—	—	—	—	Negative
10	250,000	—	—	—	—	—	—	—	—	—	—	—	—	—	Negative
11	300,000	—	—	—	—	—	—	—	—	—	—	—	—	—	Negative
12	300,000	—	—	—	—	—	—	—	—	—	—	—	—	—	Negative

* After institution of treatment: 4 indicates large numbers of actively motile spirochetes per dark field; 3, 2, 1, and ± indicate smaller numbers of spirochetes per dark field, respectively; — indicates negative results on dark-field examinations.

cillin S-R effected a more rapid disappearance of treponemes from the testicular lesions, the procaine penicillin in peanut oil was curative in a somewhat smaller dose. Blood-level determinations of penicillin were not made, but it is probable that procaine penicillin in peanut oil with aluminum monostearate maintained more prolonged effective concentrations of penicillin in the blood and tissues than did penicillin S-R.

Multiple Doses of Penicillin Alone.—Four different treatment schedules were employed, as shown in Table 3. For the purpose of brevity, the approximate total doses, in units per kilogram of weight, with which there were complete or biologic cures of all rabbits are shown, along with the next lower approximate total doses with which there were treatment failures. In all these treatment schedules the approximate minimal total curative doses of penicillin "S-R" per kilogram of weight were somewhat higher than those of procaine penicillin in peanut oil with aluminum

TABLE 3.—*Multiple Doses of Penicillin "S-R" and Procaine Penicillin G in Peanut Oil with Aluminum Monostearate in the Treatment of Acute Syphilitic Orchitis of Rabbits*

	Penicillin "S-R"			Procaine Penicillin		
Schedule of Administration	Total Dose (Units/Kg.)	No. of Animals Treated	No. Cured	Total Dose (Units/Kg.)	No. of Animals Treated	No. Cured
Once daily for 8 days	8,000	4	4	6,400	4	4
	6,400	4	2	4,000	4	3
Once daily for 15 days	6,000	4	4	4,500	4	4
	3,000	4	1	3,000	4	2
Every other day for 5 doses	10,000	4	4	7,500	4	4
	7,500	4	2	5,000	4	2
Every other day for 8 doses	8,000	4	4	5,600	4	4
	5,600	4	2	4,000	4	2

TABLE 4.—*Approximate Total Curative Doses, Units per Kilogram, of Penicillin "S-R" and Procaine Penicillin G in Oil with Aluminum Monostearate, Alone and in Combination with Oxophenarsine Hydrochloride or Bismuth Subsalicylate in the Treatment of Acute Syphilitic Orchitis of Rabbits*

	Penicillin "S-R"			Procaine Penicillin		
Schedule of Administration of Penicillin	Alone	With Oxophenarsine Hydrochloride	With Bismuth Subsalicylate	Alone	With Oxophenarsine Hydrochloride	With Bismuth Subsalicylate
Single doses, alone or with Schedule A *	200,000 to 250,000	50,000	60,000	100,000 to 200,000	30,000	40,000
Once daily for 8 days, alone or with Schedule D *	8,000	2,400	3,200	6,400	2,000	2,400
Once daily for 15 days, alone or with Schedule C *	6,000	1,500	2,250	4,500	1,050	1,200
Every other day for 5 doses, alone or with Schedule D *	10,000	2,500	3,000	7,500	2,000	2,500
Every other day for 8 doses, alone or with Schedule E *	8,000	2,000	2,400	5,600	1,600	2,000

* Schedules for oxophenarsine hydrochloride and bismuth subsalicylate therapy accompanying penicillin administration were as follows:

A, oxophenarsine hydrochloride (1.0 mg./kg.) or bismuth subsalicylate, (2.0 mg./kg.) given at the same time; *B*, oxophenarsine hydrochloride every other day for five doses (total, 1.5 mg./kg.) or bismuth subsalicylate every three days for three doses (total, 1.5 mg./kg.); *C*, oxophenarsine hydrochloride twice weekly for four doses (total, 1.2 mg./kg.) or bismuth subsalicylate twice weekly for four doses (total, 2.0 mg./kg.); *D*, oxophenarsine hydrochloride every other day for five doses (total, 1.5 mg./kg.) or bismuth subsalicylate twice weekly for three doses (total, 1.5 mg./kg.), and *E*, oxophenarsine hydrochloride every other day for eight doses (total, 2.4 mg./kg.) or bismuth subsalicylate twice weekly for five doses (total, 2.5 mg./kg.).

monostearate. We have no explanation for these differences in results unless some deterioration of crystalline sodium penicillin G in penicillin "S-R" occurred in the aqueous suspensions kept in a refrigerator at 4 to 8 C. for periods of one week.

It will also be observed that the approximate minimal total doses for both compounds when they were administered intramuscularly once a day for 15 days in succession were less per kilogram of weight than they were when the prepara-

tions were given once a day for eight days. Likewise, for both products smaller minimal total doses per kilogram of weight were required when they were given every other day for eight doses than when they were given every other day for five doses.

Penicillin with Oxophenarsine Hydrochloride or Bismuth Subsalicylate.—As shown in Table 4, both oxophenarsine hydrochloride and bismuth subsalicylate showed synergistic or additive therapeutic effects when administered simultaneously with penicillin "S-R." For example, in the single-dose treatment schedule the intravenous injection of 1.0 mg. of oxophenarsine hydrochloride per kilogram reduced the single minimal dose of penicillin S-R from 200,000 to 250,000 units per kilogram to approximately 50,000 units per kilogram, while the administration of 2.0 mg. per kilogram of bismuth subsalicylate reduced the dose to approximately 60,000 units per kilogram. Similar synergistic or additive effects with both oxophenarsine hydrochloride and bismuth subsalicylate were observed in the four additional treatment schedules shown in this table.

Similar results were observed with procaine penicillin G in oil with aluminum monostearate, in confirmation of those previously reported.[1] For example, the single minimal curative dose of 100,000 to 200,000 units per kilogram was reduced to approximately 30,000 units per kilogram by the simultaneous administration of 1.0 mg. per kilogram of oxophenarsine hydrochloride and to approximately 40,000 units per kilogram by the simultaneous administration of 2.0 mg. per kilogram of bismuth subsalicylate. Similar synergistic or additive effects with both oxophenarsine hydrochloride and bismuth subsalicylate were observed in the four additional treatment schedules shown in this table. In all five treatment schedules oxophenarsine hydrochloride showed more synergistic or additive curative effects than did bismuth subsalicylate in relation to the amounts of each administered per kilogram of body weight.

In combined treatment with oxophenarsine hydrochloride or bismuth subsalicylate it will be observed that the approximate total curative doses of both forms of penicillin when they were administered once daily for 15 days in succession were less than when the preparations were administered once daily for eight days and less when they were administered every other day for eight doses than when they were administered every other day for 5 doses.

RESULTS IN THE TREATMENT OF GENERALIZED SYPHILIS

As expected, the total curative doses of penicillin "S-R" and procaine penicillin G in oil with aluminum monostearate were higher in the treatment of generalized syphilis than in that of acute syphilitic orchitis of rabbits.

Penicillin Alone.—Single doses were not administered, but in the five treatment schedules shown in Table 5 the approximate minimal curative doses of penicillin "S-R" per kilogram of body weight were also slightly higher than were those observed with procaine penicillin G in oil with aluminum monostearate. As previously stated, we have no explanation for these differences in results unless some deterioration of crystalline sodium penicillin G in penicillin "S-R" occurred in the aqueous suspensions kept in a refrigerator for periods of one week. In these experiments it will be observed that the approximate total minimal curative doses of both

forms of penicillin per kilogram of body weight were less when they were administered every other day for eight doses than when five doses were given and, likewise, less when they were administered every four days for 12 doses than when six doses were given.

Penicillin with Oxophenarsine Hydrochloride or Bismuth Subsalicylate.—As in the treatment of acute syphilitic orchitis, the administration of oxophenarsine hydrochloride or bismuth subsalicylate materially reduced the approximate total curative

TABLE 5.—*Multiple Doses of Penicillin "S-R" and Procaine Penicillin G in Peanut Oil with Aluminum Monostearate in the Treatment of Generalized Syphilis of Rabbits*

	Penicillin "S-R"			Procaine Penicillin		
Schedule of Administration	Total Dose (Units/Kg.)	No. of Animals Treated	No. Cured	Total Dose (Units/Kg.)	No. of Animals Treated	No. Cured
Once daily for 15 days	12,000	4	4	10,500	4	4
	7,500	4	2	7,500	4	3
Every other day for 5 doses	20,000	4	4	15,000	4	4
	15,000	4	2	10,000	4	3
Every other day for 8 doses	16,000	4	4	12,000	4	4
	8,000	4	1	8,000	4	2
Every 4 days for 6 doses	24,000	4	4	18,000	4	4
	12,000	4	1	9,000	4	2
Every 4 days for 12 doses	18,000	4	4	12,000	4	4
	9,000	4	1	9,000	4	2

TABLE 6.—*Approximate Total Curative Doses, Units per Kilogram, of Penicillin "S-R" and Procaine Penicillin G in Oil with Aluminum Monostearate, Alone and in Combination with Oxophenarsine Hydrochloride or Bismuth Subsalicylate in the Treatment of Generalized Syphilis of Rabbits*

	Penicillin "S-R"			Procaine Penicillin		
Schedule of Administration of Penicillin	Alone	With Oxophenarsine Hydrochloride	With Bismuth Subsalicylate	Alone	With Oxophenarsine Hydrochloride	With Bismuth Subsalicylate
Once daily for 15 days, alone or with Schedule A *	12,000	3,000	3,750	10,500	2,700	3,000
Every other day for 5 doses, alone or with Schedule B *	20,000	4,500	5,000	15,000	3,000	3,500
Every other day for 8 doses, alone or with Schedule C *	16,000	4,000	4,800	12,000	3,200	4,000
Every 4 days for 6 doses, alone or with Schedule D *	24,000	7,200	6,000	18,000	4,800	4,200
Every 4 days for 12 doses, alone or with Schedule E *	18,000	4,800	3,000	12,000	2,500	2,000

* Schedules for oxophenarsine hydrochloride and bismuth subsalicylate therapy accompanying penicillin administration were as follows:

A, oxophenarsine hydrochloride twice weekly for 4 doses (total, 1.2 mg./kg.) or bismuth subsalicylate twice weekly for 4 doses (total, 2.0 mg./kg.); *B*, oxophenarsine hydrochloride every other day for 5 doses (total, 1.5 mg./kg.) or bismuth subsalicylate twice weekly for 3 doses (total, 1.5 mg./kg.); *C*, oxophenarsine hydrochloride every other day for 8 doses (total, 2.4 mg./kg.) or bismuth subsalicylate twice weekly for 5 doses (total, 2.5 mg./kg.); *D*, oxophenarsine hydrochloride every 4 days for 6 doses (total, 1.8 mg./kg.) or bismuth subsalicylate every 4 days for 6 doses (total, 3.0 mg./kg.), and *E*, oxophenarsine hydrochloride every 4 days for 12 doses (total, 3.6 mg./kg.) or bismuth subsalicylate every 4 days for 12 doses (total, 6.0 mg./kg.).

doses of penicillin "S-R" and procaine penicillin G in oil with aluminum monostearate in all five treatment schedules shown in Table 6 by reason of synergistic or additive effects. As in the treatment of acute syphilitic orchitis, oxophenarsine hydrochloride showed more synergistic activity than did bismuth subsalicylate in relation to the total amounts of each administered per kilogram of body weight.

In these treatment schedules it will be observed that the approximate minimal total curative doses of both forms of penicillin per kilogram of weight were appreciably less when they were administered every other day for eight doses than when five doses were given and, likewise, less when they were administered every four days for twelve doses than when six doses were given.

COMMENT

We are unable to express an opinion on the value of penicillin S-R in the treatment of human syphilis. But, since each cubic centimeter contains 100,000 units of buffered crystalline sodium penicillin G for rapid absorption and 300,000 units of procaine penicillin G for slower absorption and the maintenance of therapeutically effective blood levels for 24 hr., it appears that this product is worthy of trial in doses of 1 cc. at daily intervals or of 2 cc. every other day in the treatment of syphilis, and especially early syphilis. In the treatment of acute experimental syphilis of rabbits, however, procaine penicillin G in refined peanut oil gelled by the addition of 2% (W/V) aluminum monostearate was somewhat more effective in all the treatment schedules employed in this investigation. This observation was unexpected in those schedules employing daily intramuscular injections of penicillin "S-R," but the results observed may have been due to the fact that the suspensions in sterile saline solution were kept in a refrigerator for one week, with possible deterioration of some of the sodium penicillin G. In treatment schedules employing the administration of penicillin "S-R" and procaine in oil with aluminum monostearate every other day and every four days, the superior results observed with the latter compound were not entirely unexpected, particularly for the four-day schedule, in which more prolonged therapeutically effective blood concentrations were expected, owing to the water-repellent and dispersing thixotropic properties of aluminum monostearate, producing slower and more prolonged absorption of procaine penicillin following intramuscular injections.

In a previous investigation[1] on the treatment of experimental syphilis with crystalline sodium penicillin G in oil and wax, crystalline procaine penicillin G in aqueous suspension, crystalline procaine penicillin G in sesame oil and crystalline procaine penicillin G in peanut oil with aluminum monostearate, we found that the total curative doses of all four of these repository penicillin products were less per kilogram of body weight when the penicillin was given once a day for 15 days than when it was given once a day for eight days. Exactly similar results were observed in this study with both penicillin "S-R" and procaine penicillin in peanut oil with aluminum monostearate. Thus in the treatment of acute syphilitic orchitis the total curative doses per kilogram were less when the penicillin was given once a day for 15 days than when it was given for eight days and less when it was given every other day for eight doses than when it was given for five doses. And in the treatment of generalized syphilis the total curative doses per kilogram were less when the penicillin was given every other day for eight doses than when it was given for five doses and less when it was given every four days for 12 doses than when it was given for six doses. It is highly probable that the smallness of the total curative doses observed in the longer periods of administration was due to the effects of acquired immunity, which may have a significant bearing on the penicillin treat-

ment of human syphilis. If similar circumstances or conditions exist in the human, prolonged treatment with penicillin may be more effective than short or intensive treatment as far as biologic cures are concerned.

The results of this investigation have also afforded additional proof of the synergistic or additive activity of oxophenarsine hydrochloride and/or bismuth subsalicylate in the treatment with penicillin of acute experimental syphilis of rabbits. On this basis it is still to be expected that the therapeutic value of such combined chemotherapy of human syphilis will be ultimately established. In this connection it may be stated that we have also found that the iodides act synergistically with penicillin in the treatment of experimental syphilis.[4] For this reason we believe that the oral administration of potassium or sodium iodide should be employed in the penicillin therapy of at least latent, late acquired, and congenital syphilis of human beings, as it long has been in arsenobismuth therapy.

SUMMARY

The single curative dose of penicillin "S-R" was 200,000 to 250,000 units and of procaine penicillin G in oil with aluminum monostearate, 100,000 to 200,000 units per kilogram in the treatment of acute syphilitic orchitis of rabbits. In four additional treatment schedules procaine penicillin G in oil with aluminum monostearate was likewise somewhat more effective.

The total curative doses of both penicillin products per kilogram were less when the penicillin was administered once daily for 15 days than when it was given eight days and less when it was administered every other day for eight doses than when five doses were given.

Penicillin "S-R" was also somewhat less effective than procaine penicillin G in oil with aluminum monostearate in the treatment of generalized syphilis of rabbits in five different treatment schedules. The total curative doses of both products per kilogram were less when the penicillin was administered every other day for eight doses than when five doses were given and less when it was given every four days for 12 doses than when six doses were given.

The administration of oxophenarsine hydrochloride and/or bismuth subsalicylate in combination with penicillin "S-R" and procaine penicillin G in oil with aluminum monostearate showed pronounced synergistic therapeutic effects in the treatment of both acute syphilitic orchitis and generalized syphilis of rabbits in all the treatment schedules employed.

These results are discussed in relation to the treatment of human syphilis.

---

4. Kolmer, J. A.: Penicillin in the Treatment of Experimental Syphilis of Rabbits: V. The Synergistic or Additive Activity of Penicillin Injected Intramuscularly with Sodium Iodide Administered Orally and Intravenously, Arch. Dermat. & Syph. **61**:49 (Jan.) 1950.

PIGMENTED PURPURIC ERUPTIONS

SAMUEL J. RANDALL, M.D.
ROBERT R. KIERLAND, M.D.
AND
HAMILTON MONTGOMERY, M.D.
ROCHESTER, MINN.

WE HAVE been impressed with the close similarity between the members of that group of idiopathic pigmented purpuric eruptions which includes Schamberg's progressive pigmentary disorder, angioma serpiginosum of Hutchinson, Majocchi's purpura annularis telangiectodes and pigmented purpuric lichenoid dermatitis of Gougerot and Blum. The similarity is apparent both clinically (figs. 1, 2 and 3) and histologically (figs. 4, 5 and 6). It has been our experience that the presentation of any one of these conditions before a group of dermatologists usually provokes considerable debate, with infrequent agreement on the diagnosis.

It is characteristic of each of these disorders that the clotting time, bleeding time, thrombocyte count and other hematologic factors are within normal limits. Acute intoxicating illness, history of drug ingestion and definite allergic manifestations are not frequent features of any one of these diseases. Except for demonstrable increased capillary permeability or fragility the etiologic factors remain obscure. These facts must necessarily eliminate from consideration those purpuric conditions characterized by blood dyscrasias, such as thrombocytopenic purpura, both essential and secondary, purpura as a result of acute infectious illness or as a result of sensitivity to drugs, and the allergic group, including Henoch's and Schönlein's purpura.

In an attempt to throw some light on the commonly experienced problem of establishing definite criteria for the separation of the various pigmented purpuric eruptions, a clinical and histopathologic study was made of the cases in which diagnoses of these conditions were made at the Mayo Clinic during the past 30 years. In all, the records of 92 cases were selected for study. There were 72 cases of Schamberg's disease, 12 of angioma serpiginosum and 4 each of purpura annularis telangiectodes and pigmented purpuric lichenoid dermatitis.

SCHAMBERG'S PROGRESSIVE PIGMENTARY DERMATITIS

In 1901, under the title "A Peculiar Progressive Pigmentary Disease of the Skin," Schamberg[1] described an unusual pigmentary eruption on the legs and

Fellow in Dermatology and Syphilology, Mayo Foundation (Dr. Randall), and from the Section on Dermatology and Syphilology, Mayo Clinic (Dr. Kierland and Dr. Montgomery).

Abridgment of thesis submitted by Dr. Randall to the Faculty of the Graduate School of the University of Minnesota in partial fulfilment of the requirements for the degree of Master of Science in Dermatology and Syphilology.

1. Schamberg, J. F.: A Peculiar Progressive Pigmentary Disease of the Skin, Brit. J. Dermat. **13**:1-5 (Jan.) 1901.

arms of a 15 year old boy. The eruption consisted of "diffuse reddish-brown non-elevated irregularly oval patches" whose borders were made up of "pin head size reddish-brown scarcely elevated puncta or cayenne-pepper spots." ("Cayenne-pepper" is a term apparently borrowed by Schamberg from Tay, who used the expression some years before in describing a case of angioma serpiginosum.) Biopsy of one of the cayenne pepper spots showed an essentially normal epidermis, an infiltrate of lymphocytes and polymorphonuclear cells in the subpapillary and

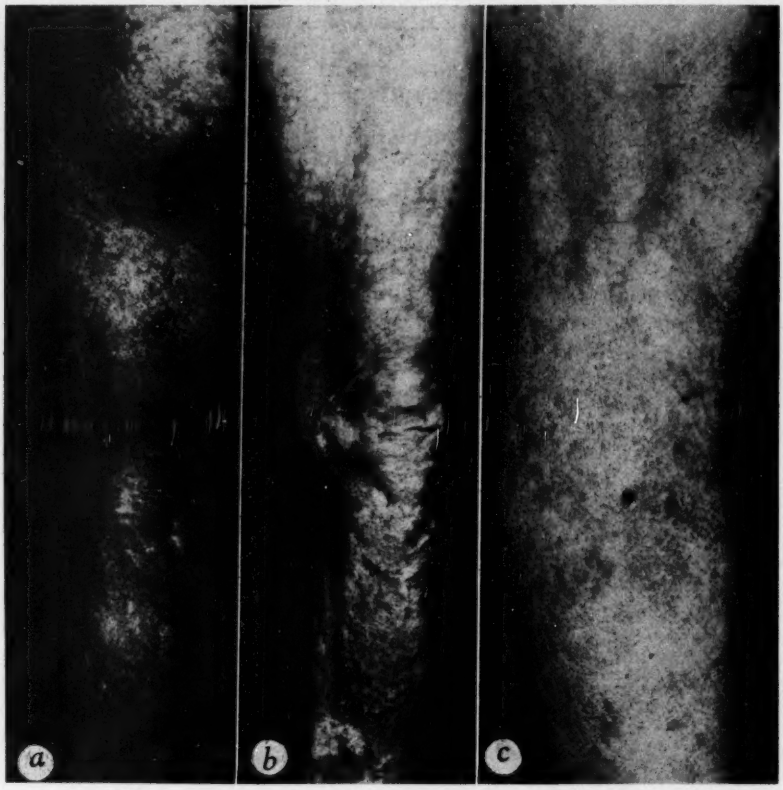


Fig. 1.—Diffuse patterns of eruption. (*a*) Angioma serpiginosum. (*b*) Schamberg's disease. (*c*) Pigmented purpuric lichenoid dermatitis.

papillary portion of the cutis, dilated papillary blood vessels and lymph spaces and proliferation of the endothelial lining of the blood vessels. Schamberg was unable to find either intracellular or extracellular pigment granules in the microscopic sections in this original case.

Since Schamberg's original description a considerable number of case reports and discussions have appeared in the literature.[2] In 1918 Kingery [3] reported the

2. (*a*) Freeman, W. T.: A Case of Pigmentation of the Lower Extremities, Brit. J. Dermat. **14**:425 (Nov.) 1902. (*b*) Fox, C.: A Case for Diagnosis, ibid. **17**:416 (Nov.) 1905.

(Footnotes continued on next page)

first case in the American literature and identified the pigment granules seen in the histologic sections as hemosiderin. In 1927 Templeton [4] reviewed the subject extensively and compared the disorder with purpura annularis telangiectodes and angioma serpiginosum. He concluded that Schamberg's disease was an entity distinct from the other two conditions.

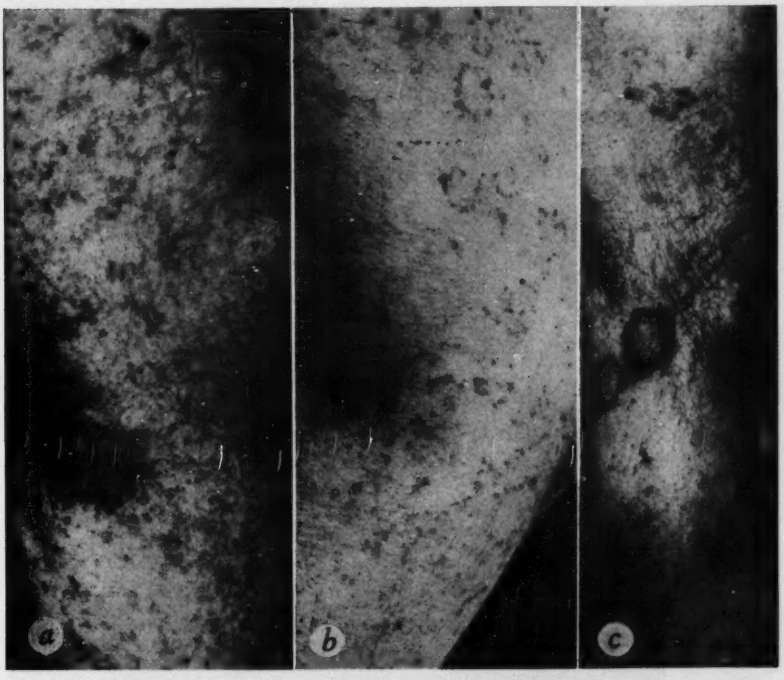


Fig. 2.—Annular and serpiginous outlines with central clearing. (*a*) Angioma serpiginosum. (*b*) Purpura annularis telangiectodes. (*c*) Angioma serpiginosum; because of the lichenoid papules the diagnosis of pigmented purpuric lichenoid dermatitis was considered.

(*c*) Whitfield, A.: A Case of Schamberg's Disease, ibid. **26**:334-335 (Aug.) 1914. (*d*) Little, E. G. G.: A Case of Schamberg's Disease: A Progressive Pigmentary Disease of the Skin, ibid. **26**:357-358 (Sept.) 1914. (*e*) Dore, S. E.: Case of Schamberg's Disease, Proc. Roy. Soc. Med. **14** (Dermat. Sec.):80, 1920-1921. (*f*) Adamson, H. G.: A Case of Schamberg's Disease, Brit. J. Dermat. **28**:334-336 (Oct.-Dec.) 1916. (*g*) Adamson, H. G.: On Schamberg's "Peculiar Progressive Pigmentary Disease of the Skin," ibid. **31**:179-185 (Oct.-Dec.) 1919.

3. Kingery, L. B.: Schamberg's Progressive Pigmentary Dermatosis: Report of a Case with Histologic Study, J. Cutan. Dis. **36**:166-172 (March) 1918.

4. Templeton, H. J.: Progressive Pigmentary Dermatosis (Schamberg): Review of Literature: Report of 2 Cases and Comparison with Angioma Serpiginosum and Purpura Annularis Telangiectodes, Arch. Dermat. & Syph. **16**:141-152 (Aug.) 1927.

In our series of 72 patients with this diagnosis, the average age at the time of observation was 48 years, with extremes of 11 and 76 years. The longest duration was 40 years, and the shortest, one year. The disorder was almost five times commoner among males than among females. Eighty-three per cent of the patients had no symptoms, and 17 per cent complained of mild to moderate pruritus.

The eruption appeared as diffuse patches of pigmentation or as various-sized pigmented macules with outlying punctate lesions. Occasionally pinpoint-sized to pinhead-sized puncta were closely grouped to form plaques. Although brown was the color most commonly reported, the color of the eruption varied in the

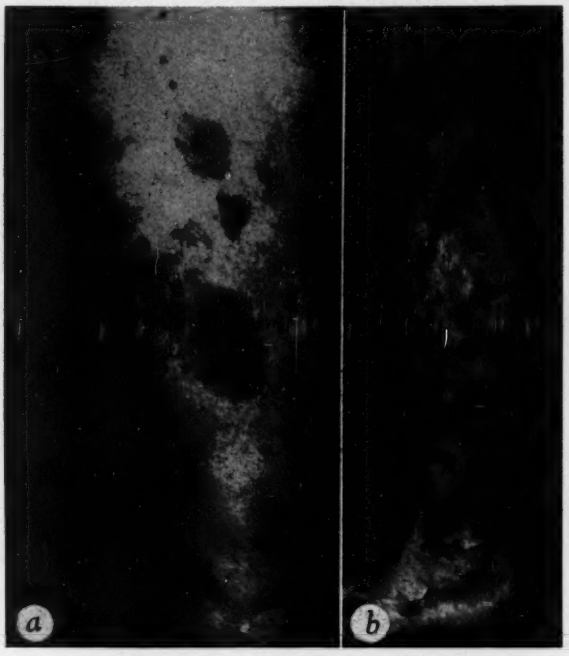


Fig. 3.—Plaques of macular involvement which may remain discrete or fuse with other plaques. (*a*) Purpura annularis telangiectodes. (*b*) Schamberg's disease.

different cases. In about 15 per cent of the cases only the term "pigmentation" was used in describing the color. The eruption was usually in the form of large or small patches or macules and at different times was referred to as blotchy, mottled, patchy, retiform and spotty (figs. 1 *b* and 3 *b*). Annular configurations were described in two cases. The eruption was generalized in nine patients and confined to the lower part of the legs in 49 patients.

Slight atrophy of the skin, observed clinically, was reported in two instances. There was a question of stasis insufficiency in seven cases of the series in which the lower part of the legs was involved, even though infrared photography showed

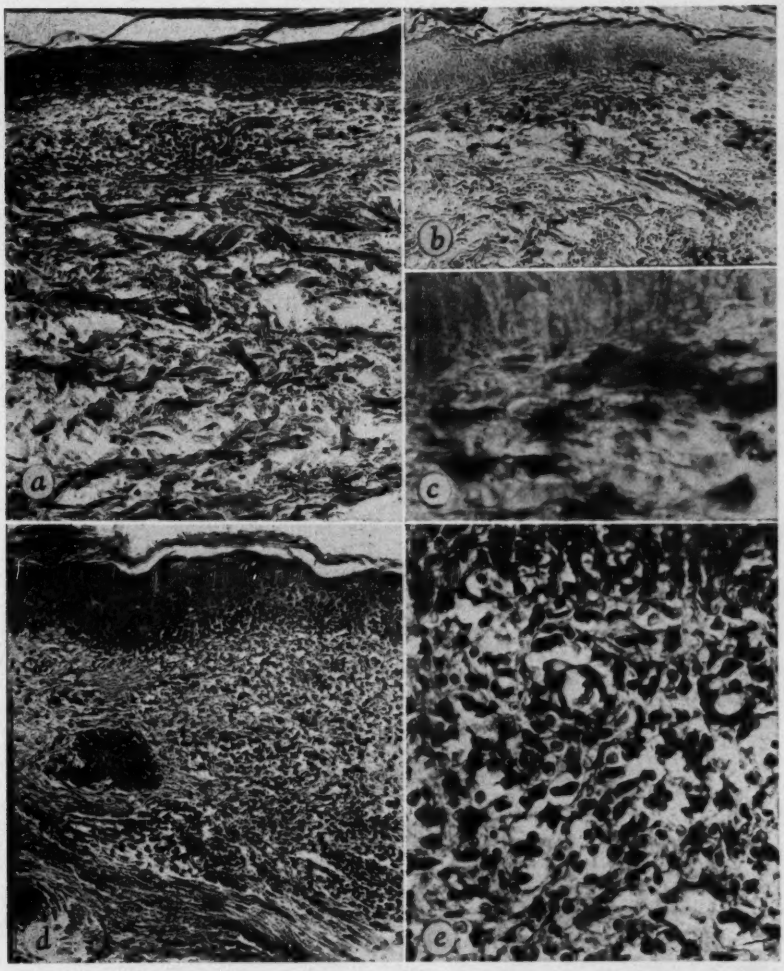


Fig. 4.—(*a*) Schamberg's disease. Hyperkeratosis, atrophy of the prickle cell layer and perivascular infiltrate in the upper part of the cutis; hematoxylin and eosin, × 135. (*b*) Same case as in *a*. Deposition of hemosiderin appearing as black particles in the upper part of the cutis; Mallory's potassium ferrocyanide stain, × 135. (*c*) Same case as in *a*. Intracellular deposits of fine granules of hemosiderin in the epidermis and coarser granules in chromatophores in the cutis, staining black; Mallory's potassium ferrocyanide stain, × 1200. (*d*) Angioma serpiginosum. Parakeratosis, liquefaction degeneration of the basal cell layer and dilated capillaries and infiltrate in the cutis; hematoxylin and eosin, × 135. (*e*) Same case as in *d*. Proliferation and dilatation of the capillaries filled with erythrocytes and diapedesis of erythrocytes. A stain for iron gave negative results; hematoxylin and eosin, ×450.

that there was no direct relation of incompetent veins to the eruption. In general, all hematologic factors, including leukocyte, erythrocyte and thrombocyte counts and bleeding and coagulation times, were within normal limits. Tourniquet tests for capillary fragility were done in two cases with negative results. The concentration of blood cholesterol which was estimated in two cases was normal.

The general health was unaffected in the majority of these patients. Although several different diseases were associated with the cutaneous eruption, no one condition occurred with such frequency as to justify any inference as to its association with the cutaneous disorder in question.

Microscopic studies were made on specimens obtained from 11 patients. It was noted that the epidermis had a normal picture in only two cases. The more important pathologic changes were present in the cutis and were limited chiefly

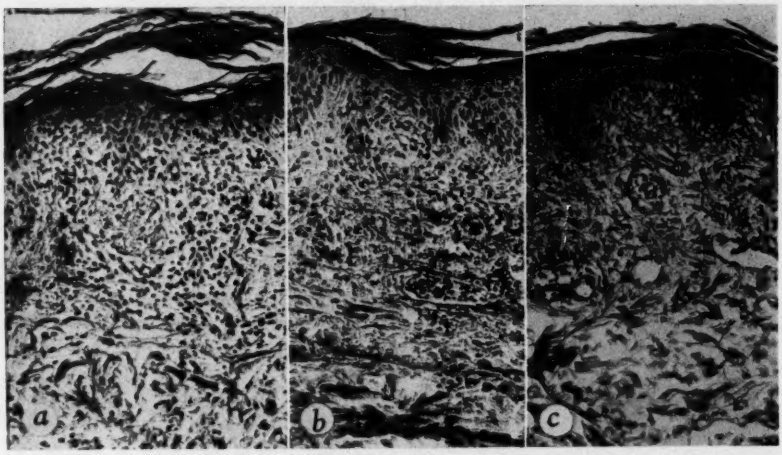


Fig. 5.—Similarities between (*a*) Schamberg's disease, (*b*) angioma serpiginosum and (*c*) pigmented purpuric lichenoid dermatitis. Parakeratosis, liquefaction degeneration of the basal cell layer, dilated capillaries and perivascular infiltrate are evident in the upper part of the cutis in all three sections; hematoxylin and eosin, × 135 (*a* and *b*) × 100 (*c*).

to the papillary and subpapillary regions (Figs. 4*a*, *b* and *c* and 5*a*). Proliferation of capillary and endothelial cells, rhexis of blood capillaries, diapedesis of erythrocytes and a mild to moderate perivascular infiltration with lymphocytes and connective tissue mononuclear cells were important changes. Thickening of the walls of small vessels and obliterative changes of the deep vessels were found in only one case. Greater or lesser deposits of hemosiderin were found in histologic material in eight of the 11 cases by use of the Mallory potassium ferrocyanide method. In three cases repeated sections revealed no hemosiderin. The iron was deposited chiefly in the form of fine intracellular granules in the phagocytes of the upper part of the cutis. Occasionally clumps of larger size were found lying free between the cells. In two cases fine granules were deposited profusely in the cells of the basal layer of the epidermis as well as in the cutis.

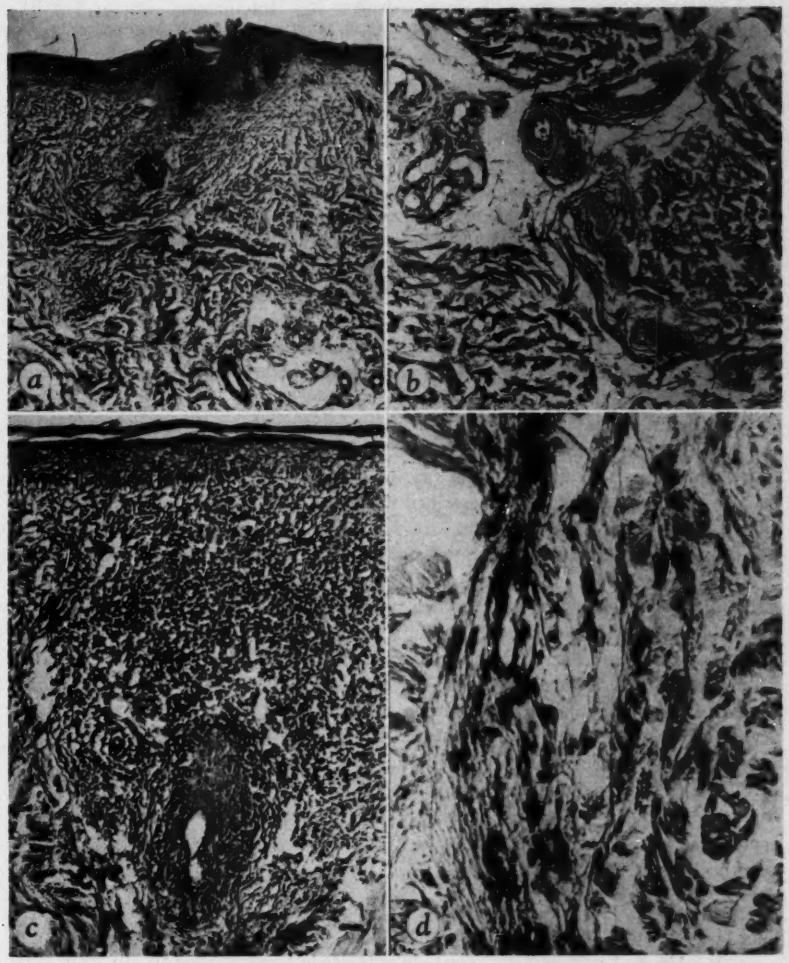


Fig. 6.—(*a*) Purpura annularis telangiectodes. Follicular plugging with atrophy of the prickle cell layer, some dilatation of the capillaries and little inflammatory reaction; hematoxylin and eosin, × 75. (*b*) Same case as in *a*. Thickening of vessel walls and obliterative changes of the deep vessels in the cutis; hematoxylin and eosin, × 100. (*c*) Pigmented purpuric lichenoid dermatitis. Atrophy of the prickle cell layer and dense infiltration by lymphocytes and histiocytes in the upper part of the cutis, with involvement of the hair follicle; hematoxylin and eosin, × 125. (*d*) Same case as in *c*. Deposition of hemosiderin, staining black, about a vessel; Mallory's potassium ferrocyanide stain, × 450.

ANGIOMA SERPIGINOSUM

Angioma serpiginosum was discussed first by Hutchinson,[5] who called it a "peculiar form of serpiginous and infective naevoid disease." His observations originally were made on a 15 year old girl who presented a superficial erythematous eruption on the outer aspect of one arm, consisting of "satellite spots" which spread into circles, producing an irregular retiform pattern. In the next two years Hutchinson [6] reported four additional examples of the disorder. The eruption was presumed to have had its origin from a congenital nevus in the original case, but such a relation could not be definitely established in the latter ones. Radcliffe-Crocker [7] in 1894 renamed the condition "angioma serpiginosum." He was impressed with the serpiginous pattern of the eruption as well as the hemorrhagic puncta at the periphery of the lesions. In 1913 Wise and Pollitzer [8] thoroughly reviewed the literature and concluded that the condition was manifested by seven different morphologic types of lesions, namely, bright red pinpoint dots, areas of diffuse uniform redness, slightly raised vascular papules, delicate vascular rings, meshworks of irregularly curved and crooked lines representing ectatic blood vessels, pigmented lesions limited to the legs and ankles and atrophic spots. They stressed the differences between this condition and purpura annularis telangiectodes and emphasized the fact that purpuric lesions do not occur in angioma serpiginosum. Some 22 years after Wise's study one of us (H. M.) with Bailey [9] reviewed the literature on angioma serpiginosum and described the lesions in an additional case from the clinical and histologic standpoints. It was concluded that the primary lesion of the eruption is a "minute copper to bright red angiomatous punctum which has a papular tendency." According to this last-mentioned review purpura is consistently absent and pigmentation when present is only an incidental finding. The histologic reports on this condition are very scant in the literature. Several investigators found the epidermis to be normal, but Wise and Pollitzer [8] and Montgomery and Bailey [9] described parakeratosis, intracellular and intercellular edema of the prickle cell layer, disorganization of the basal cell layer and areas of acanthosis as well as areas of atrophy in the epidermis. Also noted were a perivascular lymphocytic infiltrate, proliferation of the endothelial cells of the small blood vessels of the papillary and subpapillary layers and a new formation of capillaries. These two groups of investigators stressed the absence of diapedesis of erythrocytes and the fact that stains for hemosiderin and hemofuchsin gave negative results.

---

5. Hutchinson, J.: A Peculiar Form of Serpiginous and Infective Naevoid Disease, Arch. Surg., London **1**:275 (April) 1889-1890, Plate IX.

6. Hutchinson, J.: Plate VIII. State of the Hands in Lupus Erythematosus; Plates XIII and XIV. A Rare Form of Lupus (Marginatus), Arch. Surg., London **1**: (April) 1890; Serpiginous Naevoid Condition in the Skin (Naevus-Lupus), ibid. **2**:71-72 (July) 1890; Lassar's Case, ibid. **2**:111-113 (Oct.) 1890; Infective Angioma or Naevus-Lupus, ibid. **3**:166-167 (Oct.) 1891.

7. Crocker, H. R.: Lymphodermia Perniciosa, Brit. J. Dermat. **6**:367 (Dec.) 1894.

8. Wise, F., and Pollitzer, S.: Angioma Serpiginosum (Infective Angioma of Hutchinson): With a Report of a Very Extensive Case, J. Cutan. Dis. **31**:725-739 (Oct.); 916-942 (Nov.) 1913.

9. Montgomery, H., and Bailey, R. J.: Angioma Serpiginosum, Brit. J. Dermat. **47**:456-463 (Nov.) 1935.

The records of 12 cases in which the diagnosis was angioma serpiginosum were studied. Histologic material was available in 10 of these cases. The average age of the patients at the time of initial observation was 48 years, the youngest being 24 and the oldest, 66 years of age. Seven men and five women were affected. The duration was as short as three weeks and as long as 25 years. The eruption was usually blotchy or retiform, while annular or serpiginous configurations were described in only one case (figs. 1 *a* and 2 *a* and *b*). Some degree of pruritus was a complaint of a third of the patients. Varicosities were noted on the lower part of the legs of three patients, but the eruption of these persons was generalized and independent of the dilated veins.

The eruption was described in different instances as red-brown, light brown, rust color, copper color or simply "pigmented." Pigmentation was mentioned in the descriptions of the cutaneous lesions in nine cases. Atrophy was described in only one case.

Bleeding time, clotting time and other blood factors were within normal limits in all instances in which they were determined. Tourniquet tests done in four cases gave positive results in three.

Microscopic studies were made on material in 10 cases. The epidermis was essentially normal in two cases but showed changes such as hyperkeratosis, parakeratosis, intracellular and extracellular edema, acanthosis and liquefaction degeneration of the basal cell layer in the remaining eight cases. The most pronounced changes were noted in the papillary and subpapillary parts of the cutis (figs. 4 *d* and 5 *b*). In most of the sections there were dilatation and proliferation in the capillaries, destruction of vessel walls and diapedesis of erythrocytes. Proliferation of endothelial cells, aside from the formation of new capillaries, was also evident. A slight to moderate amount of perivascular cellular infiltrate, usually composed of lymphocytes and tissue histiocytes, was seen in the upper part of the cutis. Intracellular deposits of hemosiderin were present in small amounts in the cutis in one case.

PURPURA ANNULARIS TELANGIECTODES

In 1896, antedating Schamberg's report, an Italian dermatologist, Majocchi,[10] described a slowly progressing, purpuric, pigmented eruption on the lower part of the legs of a 21 year old man. He called this disorder "purpura annularis telangiectodes" and also "telangiectasia follicularis annulata." The disorder was characterized by purpuric and pigmented macules and rings of 2 to 20 mm. in diameter that did not fade on pressure and that were composed of livid red, follicular punctate spots. The center of many of the annular figures was smooth, depigmented and atrophic. Associated with the eruption were rheumatoid pains in the legs. On examination of histologic material Majocchi was impressed with the capillary dilatations in the subpapillary portion of the cutis and particularly with the distended capillaries about the hair follicles. He observed that the vessels ran a tortuous course and exhibited dilatations and constrictions along their routes and that some of the deeper capillaries showed saccular and goitrous enlargements. He mentioned diapedesis of erythrocytes and small hemorrhages but thought that the most important observation was the presence of a slight small cell infiltration about the vessels.

10. Majocchi, D.: Sopra una dermatosi telangiectode non ancora descritta "purpura annularis," Gior. ital. mal. ven. **31**:263-264. 1896.

Specimens from the center of an annular lesion showed atrophy of the epidermis, sclerosis of the connective tissue and atrophy of the dermal appendages.

Although this condition has been reported frequently in foreign publications, the English and American literature are meager on the subject. MacKee [11] is credited with introducing the disease to the American dermatologists when he reviewed the literature on some 38 cases and reported an additional case of his own with photographs of histologic sections. His observations compared closely with those of Majocchi. MacKee felt that this condition was an entity distinct from either Schamberg's disease or angioma serpiginosum.

A diagnosis of purpura annularis telangiectodes was made in four cases in our series. The clinical records in all these cases have been studied, but microscopic material was available in only one case. Three patients were women, and one was a man. The ages varied from 23 to 71 years. The duration of the disease was from six months to two years. No history of remissions and exacerbations in the course of the eruption was mentioned. Signs of systemic disease were lacking.

One patient complained of a sensation of burning at the affected sites, but the others had no symptoms. Annular lesions were described in three of the four cases, but no special configuration was mentioned in the remaining one (figs. 2 *b* and 3 *a*).

Pigmentation or coloration other than purpuric was not mentioned. Purpura was noted as the basic factor in the eruption in each instance. Telangiectasia was noted in three cases, and the absence of telangiectasia was specifically mentioned in one case. Atrophy of the centers of the ring forms was present in two cases and absent in the remaining two. One of the patients manifesting atrophic lesions also showed ulceration in the centers of some of the annular lesions.

Leukocyte and erythrocyte counts were not remarkable. A questionably low thrombocyte count of 87,000 was found in one case, but the bleeding time, clotting time and clot retraction time were normal. A test to determine capillary fragility was performed in only one case, by the Rumpel-Leede method, and this gave positive results.

The specimen in the one case in which a microscopic study was made was taken from an annular lesion on the thigh. Examination showed atrophy of the epidermis with absence of the rete ridges and dermal papillae. In places there was a slight hyperkeratosis of the stratum corneum. Changes in the upper part of the cutis were minimal except for a perivascular inflammatory reaction characterized by the presence of lymphocytes and polymorphonuclear leukocytes. In the middle and deeper portions of the cutis the walls of the blood vessels were thickened and sclerosed, and at several places there was complete obliteration of the lumens (fig. 6 *a* and *b*).

The potassium ferrocyanide stain showed small amounts of hemosiderin deposited above the blood vessels of the upper part of the cutis.

PIGMENTED PURPURIC LICHENOID DERMATITIS

In 1925 Gougerot and Blum [12] reported on a skin malady of 15 months' duration in a healthy 41 year old man. The condition was limited to the lower part of the

11. MacKee, G. M.: Purpura Annularis Telangiectodes, J. Cutan. Dis. **33**:129-141 (Feb.); 186-208 (March); 280-311 (April) 1915.

12. Gougerot, H., and Blum, P.: Purpura angioscléreux prurigineux avec éléments lichénoïdes (présentation de malade), Bull. Soc. franç. dermat. et syph. **32**:161-163 (April) 1925.

legs. They called the disease "purpura angioscléreux prurigineux avec éléments lichénoïdes." After encountering four such cases in the next few years the authors [13] decided that they had recognized a new cutaneous entity and published the description and features of this new disease under the title "Dermatite lichénoïde purpurique et pigmentée." They characterized the eruption as having smooth, slightly elevated, round or polygonal papules, 0.25 to 2 mm. in diameter, of orange-red color, usually occurring on the lower part of the legs only but not infrequently involving the thighs, trunk and upper extremities. Histologically the eruption was characterized by hyperkeratosis and parakeratosis, obliteration of the rete pegs and absence of the stratum granulosum in the epidermis. In the cutis there was a perivascular infiltrate of lymphocytes, plasma cells and histiocytes, swollen ectatic capillaries, endothelial proliferation to the point of obliterative endarteritis, diapedesis of erythrocytes and deposition of intracellular and extracellular granules of hemosiderin.

Ormsby [14] first reported the condition in the American literature, and soon thereafter Wise and Wolf [15] and Michelson and Laymon [16] reported cases and compared the condition with Schamberg's disease, Majocchi's purpura and angioma serpiginosum. Recently Vilmar [17] has reviewed the literature on the subject and reported six additional cases of her own.

Four cases were selected for study in our series. The ages of the patients varied from 26 to 55 years, and all were men. The duration was as long as two years and as short as two months. Pruritus was noted in only one patient. No special configuration was observed, but the eruption was described as disposed in patches in two instances. Definite purpuric lichenoid papules were described in two cases and purpuric lesions with lichenification in the remaining two (fig. 1 *c*). Pigmentation was present in all four cases, but atrophy and telangiectasia were not reported. Venous insufficiency of the lower part of the legs was present in one instance, but the eruption in this case was widespread. Bleeding and clotting factors were normal in the instances in which they were determined, and leukocyte and erythrocyte counts were not remarkable. The Rumpel-Leede test for capillary fragility was performed on one patient, with negative results.

Specimens for microscopic study were available in each of the four cases. In two cases two or more specimens were obtained from different locations.

The epidermis was normal in only two of the cases. Hyperkeratosis was present in three of the sections studied, but parakeratosis was a feature in only one section. Again the important changes were seen in the upper part of the cutis, in which there was a perivascular infiltrate of lymphocytes and histiocytes (Figs. 5*c* and 6*c* and *d*); in one section there was a diffuse, wide, bandlike subepidermal infiltrate

13. Gougerot, H., and Blum, P.: Dermatite lichénoïde purpurique et pigmentée: Comparision avec la maladie de Schamberg, Arch. dermat.-syph. Hôp. St. Louis **1**:555-572, 1929.

14. Ormsby, O. S.: Pigmented Purpuric Lichenoid Dermatitis, in A Practical Treatise on Diseases of the Skin for the Use of Students and Practitioners, ed. 4, Philadelphia, Lea & Febiger, 1934, p. 216.

15. Wise, F., and Wolf, J.: Pigmented Purpuric Lichenoid Dermatitis: A Condition Resembling Schamberg's Disease, Arch. Dermat. & Syph. **31**:445-451 (April) 1935.

16. Michelson, H. E., and Laymon, C. W.: Purpuric Pigmented Lichenoid Dermatitis, Arch. Dermat. & Syph. **32**:707-717 (Nov.) 1935.

17. Vilmar, G.: Beitrag zur Kenntnis der Dermatitie lichénoide purpurique et pigmentée, Arch. Dermat. u. Syph. **186**:476-492, 1948.

which produced a pressure type of atrophy of the prickle cell layer above. Capillary changes were noted and were similar to those previously described for Schamberg's disease and angioma serpiginosum.

All seven sections were positive for hemosiderin on staining by the Mallory potassium ferrocyanide method. The iron-bearing granules were deposited in the cutis, and none were demonstrable in the epidermis.

COMMENT

As we have previously pointed out, the conditions under study are not universally recognized as separate diseases. Many authorities have failed to appreciate the fine differences between some of them. Schamberg,[1] in his original paper, admitted the similarity of the condition he described to angioma serpiginosum. Whitfield [2c] regarded Schamberg's disease and angioma serpiginosum as varieties of the same disorder, and Crocker and Fox [18] looked on angioma serpiginosum and Majocchi's purpura as one and the same condition. Wise and Pollitzer [8] were impressed with the pronounced clinical resemblance of Schamberg's disease and angioma serpiginosum, and although they definitely considered angioma serpiginosum and purpura annularis telangiectodes to be separate entities, nevertheless they remarked that "aside from the purpuric element in Majocchi's disease there seems to be a striking clinical resemblance between the two dermatoses." Wise [19] emphasized that annular configurations should not be considered a criterion for the diagnosis of purpura annularis telangiectodes. Meirowsky,[20] in his exhaustive appraisal of Schamberg's disease and related eruptions, implied that angioma serpiginosum and Schamberg's disease were very closely allied clinically and histologically and stated that there are no features of Schamberg's disease which are not present in Majocchi's purpura. While many of the German writers agree to the separation of Schamberg's disease from Majocchi's purpura, Gottron [21] and Arndt,[22] among others, have expressed the belief that these conditions are one and the same disease. Scholtz [23] felt that Schamberg's disease and purpura annularis telangiectodes existed in "closest pathogenetic and nosologic relationship." Although pigmented purpuric lichenoid dermatitis of Gourgerot and Blum is a relatively new diagnosis the doubt as to separate identity of the condition has been voiced from many quarters. Michelson and Laymon [16] were unable to differentiate between the minute papules of pigmented purpuric lichenoid dermatitis and the cayenne pepper punctate lesions of Schamberg's disease. We agree with Peck and Copley,[24] who feel that these eruptions are due to increased capillary fragility.

---

18. Crocker, H. R., and Fox, T. C., cited by Wise and Pollitzer.[8]

19. Wise, F.: Purpura Annularis Telangiectodes (Majocchi) and Progressive Pigmentary Dermatosis (Schamberg): Clinical and Histopathologic Features; Differential Diagnosis, J. Invest. Dermat. **5**:153-166 (Aug.) 1942.

20. Meirowsky, E.: Schambergsche Erkrankung, Suttonsche Erkrankung, Chloasma, in Jadassohn, J.: Handbuch der Haut- und Geschlectskrankheiten, vol. 4, pt. 2, Berlin, J. Springer, 1933, pp. 971-1010.

21. Gottron, H.: Purpura Majocchii, Arch. Dermat. u. Syph. **159**:355-467, 1930.

22. Arndt, cited by Meirowsky.[20]

23. Scholtz, M.: Purpura Annularis Telangiectodes (Majocchi's Disease): Report of Case, Arch. Dermat. & Syph. **19**:769-791 (May) 1929.

24. Peck, S. M., and Copley, A. L.: Medical Progress: Diagnosis and Treatment of Skin Manifestations of Capillary Fragility, New England J. Med. **235**:900-906 (Dec. 19) 1946.

In the study of this group of conditions we have failed to appreciate any consistent clearcut distinguishing characteristics separating one from another (figs. 1, 2 and 3). Purpura annularis telangiectodes might be set aside because of its tendency to annular lesions, atrophy and a more purpuric quality than the others. However, the results of our study would not warrant such a conclusion. It is evident that the anatomic nature of the punctate lesions is very difficult to determine clinically. This fact is brought out in the survey of our cases as well as from the study of the literature. It is interesting to note, too, since Schamberg's disease frequently is considered a disorder limited to the lower part of the legs, that 12 per cent of the patients with this diagnosis had generalized involvement of the skin.

In the study of the clinical descriptions of a number of cases of stasis hemosiderosis with or without demonstrable varicose veins it was apparent that the hemosiderosis of the eruption in those cases, aside from the presence of varicosities and edema, is often indistinguishable clinically from the picture for the pigmented purpuric eruptions described in this paper. We feel that in these conditions there is frequently a stasic factor due to weight and force of gravity of the column of blood even in the absence of gross venous incompetency.

In the histologic studies for the presence of iron in our series 29 specimens were stained by the Mallory potassium ferrocyanide method; 17 of this number gave a positive reaction and 12 gave a negative reaction for hemosiderin. We think it is important to point out that the lower part of the leg was a site of biopsy in 12 of 17 cases in which the stain for hemosiderin gave positive results, but the specimen for biopsy was taken from the lower extremities in only two of the 12 cases in which iron was absent. It appears probable that erythrocytes deposited interstitially in the cutis of the lower part of the legs as a result of diapedesis are more likely to be broken down into their component parts, with more extensive phagocytosis of the hemosiderin fraction, than are those deposited in less dependent parts of the body. It would seem, too, that the age and nature of the lesion selected for biopsy would influence the results in tests for iron.

Capillary fragility tests performed in eight cases gave positive results in four, or 50 per cent, without respect to diagnosis. In a more recent observation of 12 patients who were not included in the present study, tourniquet tests gave positive results in more than 75 per cent of instances. It appears to us that the cause of the purpura is increased capillary fragility and permeability. Serologic tests for syphilis gave negative results in all the 92 cases, and the values for blood pressures were not remarkable.

SUMMARY

The medical records of the cases of Schamberg's progressive pigmentary dermatosis, angioma serpiginosum, purpura annularis telangiectodes and pigmented purpuric lichenoid dermatitis of Gourgerot and Blum seen at the Mayo Clinic in the past 30 years and the historical literature on these different conditions have been reviewed. The records of 72 cases of Schamberg's disease, 12 cases of angioma serpiginosum, four cases of pigmented purpuric lichenoid dermatitis, four cases of Majocchi's purpura and all available histologic material from these different cases have been studied. A striking similarity in the morphologic descriptions of the lesions in our cases as well as in those reported in the literature was apparent despite the differences in diagnosis.

Except in isolated instances the general health was not affected in any of our cases. Pruritus was a complaint of a few patients, but otherwise the eruptions provoked no symptoms. Young and old alike were affected, but there were no infants in the group. Hematologic factors, including bleeding and clotting times and thrombocyte values, were within normal limits in almost all cases. Capillary fragility tests (modifications of the Rumpel-Leede method) were performed in eight cases and gave positive results in four, or 50 per cent, without respect to diagnosis. In a more recent study of 12 patients, tourniquet tests gave positive results in more than 75 per cent of instances. These cases were not included in this study. It appears to us that the cause of the purpura is increased capillary fragility and permeability. Serologic tests for syphilis gave negative results in all 92 cases, and the values for blood pressure were not remarkable.

Examination of histologic material was made in 11 cases of Schamberg's disease, in 10 cases of angioma serpiginosum, in four cases of pigmented purpuric lichenoid dermatitis and in only one case of purpura annularis telangiectodes. A total of seven specimens were examined in the four cases of pigmented purpuric lichenoid dermatitis. The histologic picture was not characteristic in any of the conditions, and the clinical diagnosis and microscopic opinion were frequently at odds. Epidermal changes such as liquefaction degeneration, degeneration of the basal cell layer and edema of the prickle cell layer and changes in the capillary vessels in the upper part of the cutis consisting in dilatation and proliferation were slightly commoner in angioma serpiginosum than in the other conditions. The Mallory potassium ferrocyanide stain for hemosiderin gave positive results in the majority of sections from cases of Schamberg's disease, in all seven specimens of pigmented purpuric lichenoid dermatitis and in the one section from a case of purpura annularis telangiectodes which was studied. Small amounts of hemosiderin were present in only one case of angioma serpiginosum. A cellular infiltrate, chiefly lymphocytic and located about the smaller vessels of the upper part of the cutis, was present in practically all the microscopic sections studied. Obliterative endarteritis was noted in one case of Schamberg's disease, in one case of pigmented purpuric lichenoid dermatitis and in the one section from a case of purpura annularis telangiectodes which was available for study.

CONCLUSIONS

Angioma serpiginosum of Hutchinson and Crocker, Schamberg's progressive pigmentary dermatosis and pigmented purpuric lichenoid dermatitis of Gougerot and Blum are closely related conditions, if not actually only cutaneous expressions of a single process in different degrees. Purpura annularis telangiectodes, because of its more pronounced purpuric quality and more nearly constant tendency to show annular lesions with central atrophy, may constitute a morphologic entity somewhat different from the others, but the latter statement cannot be proved or disproved by the limited material in our study.

Increased capillary fragility or permeability, or both, as well as dilatation and proliferation of capillaries, would seem to have been the more important factor in the production of the cutaneous picture in our series of cases.

The primary minute vascular or hemorrhagic lesions in each condition are usually indistinguishable. It is seldom possible clinically to determine the anatomic nature of punctate lesions.

The lichenoid papule described by Gougerot and Blum as a feature of pigmented purpuric lichenoid dermatitis would seem to be merely a variant of the pinhead to pinpoint-sized lesion described in Schamberg's disease or the other conditions considered in this paper.

Pigmented purpuric eruptions of the lower part of the legs as a direct result of venous stasis may simulate any one of these disorders. However, differentiation may be made by determination of the presence or absence of venous incompetency and by means of photography with infrared light.

Aside from the presence or absence of hemosiderin, which may depend on the site of biopsy, no constant, clearcut histologic difference which would permit them to be consistently differentiated under the microscope exist among these disorders.

The general absence of symptoms, the benign nature and the obscure causative factors of these disorders would seem to make their separation unwarranted.

Clinical Notes

GENERALIZED HERPES ZOSTER, ENCEPHALITIS AND LYMPHATIC LEUKEMIA

A Case Report

LAWRENCE FRANK, M.D.
BROOKLYN

The following is a report of a case of herpes zoster occurring in a patient with chronic lymphatic leukemia and followed by a generalized varicelliform eruption and encephalitis. The rarity of these complications and the immunologic aspects posed by them make the case worthy of report.

The relationship between varicella and herpes zoster is well known.[1] This relationship was reviewed by Brain,[2] who performed original experiments indicating the close relationship and possible identity of the viruses of zoster and varicella. Director,[3] in discussing a case of herpes zoster and varicella followed by a generalized varicelliform eruption, states that this eruption may be an intermediate state between varicella and uncomplicated zoster.

Herpes zoster occurs rather frequently in patients with lymphoblastoma,[4] and when it does it is frequently followed by generalized spread of the lesions.[5]

Encephalitis is a very rare complication of herpes zoster, but it is not too infrequently seen after varicella.[6]

REPORT OF CASE

The patient, a physician aged 58, was hospitalized on Oct. 25, 1948 with a generalized varicelliform eruption. Two weeks prior to admission, while receiving deep x-ray therapy for cervical lymphadenitis caused by chronic lymphatic leukemia, he had had right cervical herpes zoster. The lesions were very painful and discrete, and the underlying skin was deeply erythematous. A day prior to admission the eruption spread and became generalized, and the patient was admitted to the hospital acutely ill.

The diagnosis of chronic lymphatic leukemia had been made three years before when the patient had first noticed an enlarged right cervical lymph node. Excision biopsy of the node had been done at this time along with studies of the peripheral blood and sternal marrow. Since, there had been a progressive enlargement of the cervical, axillary, inguinal, epitrochlear and mediastinal nodes. Several courses of urethan reduced the white cell count to between 10,000 and 20,000 cells but had no particular effect on the lymph glands. In 1905 the patient

From the Department of Dermatology, State University of New York, State University Medical Center at New York City, College of Medicine, and the Long Island College Hospital.

1. Lynch, F. W.: Herpes Zoster Followed by Chickenpox, Arch. Dermat. & Syph. **44**:68 (July) 1941.

2. Brain, R. T.: A Relation Between the Viruses of Zoster and Varicella as Demonstrated by Complement-Fixation Reaction, Brit. J. Exper. Path. **14**:67 (April) 1933.

3. Director, W.: Zoster with Varicelliform Eruption: A Case Report, U. S. Nav. M. Bull. **42**:186 (Jan.) 1944.

4. Craver, L. F., and Haagensen, C. D.: Note on the Occurrence of Herpes Zoster in Hodgkin's Disease, Lymphosarcoma and the Leukemias, Am. J. Cancer **16**:502 (May) 1932.

5. Bäfverstedt, B.: Herpes Zoster Generalisatus und leukämische Lymphadenose (kasuistischer Bericht), Acta dermat.-venereol. **21**:60 (Feb.) 1940.

6. Waring, J. J.; Neuberger, K., and Geever, E. F.: Severe Forms of Chickenpox in Adults, Arch. Int. Med. **69**:384 (March) 1942.

had had infectious mononucleosis. He had been hospitalized in 1915 because of infectious hepatitis and again in 1934 because of lobar pneumonia.

On admission the patient was acutely ill. His temperature was 104.4 F.; his pulse rate, 128; his respirations, 24, and his blood pressure, 90 systolic and 50 diastolic.

Results of laboratory studies were as follows: red blood cell count, 3,780,000, with 13.5 Gm. of hemoglobin; white blood cells, 9,910, with a differential count of 77 per cent neutrophilic leukocytes, 22 per cent large and small lymphocytes and 3 per cent young lymphocytes; blood sugar, 142 mg.; urea nitrogen, 20.0 mg.; uric acid, 3.4 mg.; creatinine, 1.9 mg.; total protein, 6.5 mg.; serum albumin, 4.0 mg., and serum globulin, 2.5 mg. per 100 cc.

The patient was given 500 cc. of plasma and started on treatment with penicillin, 100,000 units every three hours. His temperature remained elevated, and on the third day of admission the drowsiness increased greatly. The patient had hiccoughs, became flighty and confused and picked at the bed clothes. A diagnosis of encephalitis was made, and neurologic consultation was requested.

Neurologic examination disclosed no apparent weakness. The deep reflexes of the left arm and leg were increased over the right side. The left pupil was larger than the right. Muscular tremor and twitchings were present, and after sleeping the patient showed the confused mental state characteristic of brain edema. The diagnosis of encephalitis due to virus infection was confirmed, and hypertonic dextrose was given by vein. The patient's course was stormy for the next few days. He became quite disoriented. Urinary incontinence set in along with a "frightened speech," severe tremor and muscular twitchings. A positive Babinski sign developed on the right side, and, though the temperature and pulse rate came down to 100.0 F. and 140 respectively, the respirations became more rapid (40-60) and were of the Biot type.

On the eleventh and twelfth days after admission the patient showed some improvement, with more alertness and less confusion mentally. His condition generally improved. Complement fixation studies for rickettsialpox (October 28) gave negative reactions. Cultures of the vesicles (October 28 and November 9) showed Staphylococcus alba in pure culture. Cultures taken on November 26 showed no growth. New crops of vesicles continued to appear on the skin of the back, lower part of the thorax and, to a lesser degree, on the extremities, up to the seventh week of illness (December 3), with the older lesions healing and fading. The temperature, pulse rate and respirations gradually came down to normal (December 7) and remained so. The patient was discharged from the hospital on December 11, eight weeks after admission.

COMMENTS

The frequent association of herpes zoster and lymphatic leukemia has been observed by many investigators. Craver and Haagensen [4] stated that herpes zoster was commoner in patients with lymphoblastoma than in the population at large. Interestingly enough, when herpes zoster occurs in a patient with lymphatic leukemia the herpetic eruption tends to disseminate and become generalized. Bäfverstedt [5] found that of the cases reported in which herpes zoster and lymphatic leukemia occurred together, 58 per cent were of generalized herpes zoster associated with leukemia. Wile and Holman [7] enumerated 32 previously reported cases and added reports of two more of their own. Barton and O'Leary [8] in 1945 added an additional case to the reports, and the case here presented brings the total number of cases reported to date to 36.

Encephalitis as a complication of herpes zoster is very rare, although in approximately 50 per cent of the cases of herpes zoster there are changes in the spinal fluid without demonstrable clinical signs of encephalitis. Krumholz and Luhan [9] describe an autopsy in a case of meningoencephalitis following herpes zoster. They summarize five other cases of herpes zoster followed

7. Wile, U. J., and Holman, H. H.: Generalized Herpes Zoster Associated with Leukemia, Arch. Dermat. & Syph. **42**:587 (Oct.) 1940.

8. Barton, R. L., and O'Leary, P. A.: Herpes Zoster Generalisatus Associated with Chronic Lymphatic Leukemia, Arch. Dermat. & Syph. **51**:263 (April) 1945.

9. Krumholz, S., and Luhan, J. A.: Encephalitis Associated with Herpes Zoster: Report of Case, Arch. Neurol. & Psychiat. **53**:59 (Jan.) 1945.

by encephalitis collected from the literature and mention three other cases in which no autopsy was done. McCormick [10] in 1947 added a report of another case of encephalitis which developed in a child with bilateral herpes zoster.

However, encephalitis as a complication of varicella, although infrequent, has been reported much more frequently than encephalitis following zoster. Underwood [11] enumerated a total of 132 cases of encephalitis following varicella through 1935. Since then 41 more cases have been reported, making to date 173 cases reported of chicken pox encephalitis. Bullowa and Wishik [12] found a total of five cases of encephalitis in 2,534 cases of chicken pox in a five year period at the Willard Parker Hospital. Elizabeth Lowry [13] in a discussion of chicken pox encephalitis stated that the encephalitis does not seem to be influenced by the age or sex of the patient or by the season of the year but is more likely to arise after a severe attack of chicken pox than after a mild attack.

COMMENT

Aside from the rarity of such a combination, the immunologic aspects presented by a patient with chronic lymphatic leukemia, herpes zoster, a generalized varicelliform eruption and encephalitis give rise to much interesting speculation. Assuming that the viruses of varicella and zoster are identical or very closely related, then the differences in the immunity of the host determine the type of eruption and any other complication thus ensuing. In varicella we have a host with no previous immunity who can run the gamut from a very mild to a very severe infection, the very severe infections resulting in the occasional cases of encephalitis seen. In the adult, however, a host now partially immune either as a result of previous subclinical attack or in consequence of maturity, we find the virus causes only herpes zoster when infection occurs.

When leukemia is present the partial immunity or the adult type of immunity seems to be modified somewhat by the leukemia, as is attested by the frequency of the occurrence of herpes zoster in patients with leukemia and the frequency of the dissemination of the zoster to become the generalized form. If we can assume the viruses of zoster and varicella are similar, then actually what we have is a reversion to the childhood type of infection as a result of the effects of leukemia on the host's immunity.

55 Rugby Road (26).

10. McCormick, G. W.: Encephalitis Associated with Herpes Zoster, J. Pediat. **30**:473 (April) 1947.

11. Underwood, E. A.: The Neurological Complications of Varicella: A Clinical and Epidemiological Study, Brit. J. Dis. Child. **32**:83 (April-June); 177 (July-Sept.); 241 (Oct.-Dec.) 1935.

12. Bullowa, J. G. M., and Wishik, S. M.: Complications of Varicella: Their Occurrence Among 2,534 Patients, Am. J. Dis. Child. **49**:923 (April) 1935.

13. Lowry, E. C.: Chickenpox Encephalitis, Journal-Lancet **65**:191 (May) 1945.

TINEA BARBAE OF THE KERION TYPE PRODUCED BY TRICHOPHYTON PURPUREUM

Report of a Case

KURT LOEWENTHAL, M.D.
FREEPORT, N. Y.
AND
ROBERT L. REIN, M.D.
BROOKLYN

The patient, W. B., a 48-year-old white man, stated that his eruption began May 15, 1950, with a few small lumps under the skin of both cheeks. He visited a physician, who believed that the condition started as a "gum" infection and who gave the patient one injection of

From the Long Island College Hospital and the Department of Dermatology and Syphilology, State University Medical Center at New York City, College of Medicine.

penicillin on June 30, 1950. A dentist told him, however, that his gums were in good condition and suggested that he consult a dermatologist. The latter administered superficial unfiltered x-rays (75 r twice a week for three successive weeks) and penicillin topically and parenterally, combined with local warm compresses. Since this regimen had little effect, incision of the abscesses of the left cheek was suggested. The patient objected and consulted another physician. The latter administered 1,200,000 units of penicillin in four successive days. Because of poor response the patient was referred to one of us (R. L. R.).

On examination on July 31, 1950, the left cheek showed a large painful subcutaneous mass reaching from the zygoma to the lower edge of the mandible. There were four crusted sinus-like openings discharging, on pressure, a small amount of yellow pus. The overlying skin was dusky red, smooth, and tense. A deep fungous infection was suspected, and pus was cultured upon dextrose-peptone agar. While the result of the culture was awaited a therapeutic trial with aureomycin, sulfadiazine and chloramphenicol (chloromycetin®) was made. None was effective within a period of 14 days. On Aug. 14, 1950, dihydrostreptomycin was administered parenterally in doses of 1 gm. twice daily. After four days there was a definite clinical improvement in which the large mass began to shrink and break up into discrete small nontender nodules and the discharge diminished. To hasten resolution a saturated solution of potassium iodide was given by mouth, beginning with 20 drops three times a day, which dose soon was reduced to 10 drops three times a day owing to the patient's intolerance of the higher dose. At that time was reported the growth of a fungus, which could not yet be identified. Fresh cultures of the then scant pus were made and administration of dihydrostreptomycin continued for 20 days, up to a total amount of 40 gm., together with the use of the solution of potassium iodide. After this time only a few small indurated areas remained. The dihydrostreptomycin therapy was discontinued, and then it was resumed after one week owing to a persistent, intermittent scant purulent discharge, for a total dose of 14 gm. within seven days. Discharge then ceased, and on Oct. 1, 1950, the condition was apparently cured.

A test with trichophytin (Lederle), diluted 1:30, was performed after subsidence of the clinical manifestations. An immediate wheal was produced with diameters of about 2 by 2 cm. At 48 hours the reaction was also present as an infiltrated patch with the same diameters.

MYCOLOGICAL STUDIES

Pus from the draining sinuses was inoculated on dextrose-peptone agar (Difco) on two occasions within two weeks. The results of both tests were identical. The relatively slow-growing fungus formed fluffy white hemispheric colonies with velvety edges. After about two weeks there developed on the reverse of the colonies a reddish-purple pigment which intensified with increasing age of the colonies. In culture mounts numerous microconidia were seen in clusters and singly along the filaments. The mycelium was relatively simple, without spirals and racquet filaments. In repeated subcultures the gross as well as the microscopic characteristics were retained. The mycologic diagnosis was Trichophyton purpureum.

COMMENT

According to the literature,[1] tinea barbae is rarely seen in the United States; Lewis and Hopper [1a] state that it is uncommon in New York. It appears to be more frequently encountered in rural areas. Fowle and Georg [2] noted that during three years in a farm commnuity seven cases of tinea barbae occurred among 23 cases of suppurative ringworm. The causative organisms were faviform trichophytons.

1. (*a*) Lewis, G. M., and Hopper, M. E.: An Introduction to Medical Mycology, ed. 3, Chicago, The Year Book Publishers, Inc., 1948. (*b*) Conant, N. F.; Martin, D. S.; Smith, D. T.; Baker, R. D., and Callaway, J. L.: Manual of Clinical Mycology, National Research Council, Division of Medical Sciences, Philadelphia, W. B. Saunders Company, 1944. (*c*) Andrews, G. C.: Diseases of the Skin for Practitioners and Students, ed. 3, Philadelphia, W. B. Saunders Company, 1946.

2. Fowle, L. P., and Georg, L. K.: Suppurative Ringworm Contracted from Cattle, Arch. Dermat. & Syph. **56**:780 (Dec.) 1947.

The clinical picture of tinea barbae varies with the nature of the infecting micro-organisms. The superficial and sycosis type of infection is produced most often by Trichophyton violaceum or T. purpureum. When the infecting organism is T. mentagrophytes, T. faviforme or Microsporum canis, the deep-inflammatory or kerion type is commoner. A kerion reaction due to T. purpureum as observed in this case does not appear to have been recorded. The response in this instance to the trichophytin test with an immediate wheal and a tuberculin-type reaction occurs in about one-third of all infections with T. purpureum.[1] It is not clear whether or not this double response is associated with a grossly inflammatory type of clinical picture.[1]

The evaluation of dihydrostreptomycin therapy in this case must take into consideration the following facts:

1. Subjective and objective improvement began within four days after inception of dihydrostreptomycin therapy.

2. The abscesses resisted treatment with other antibiotics, sulfadiazine and x-rays for a period of three months.

3. Potassium iodide alone was unable to effect the cure, which began before it was employed.

4. Dihydrostreptomycin, on in vitro testing, has been found to have only slight effect as a fungicide.[3]

5. No reports exist on the effect of streptomycin in the treatment of T. purpureum infections.

6. Kerions with a marked inflammatory reaction have a tendency to spontaneous cure. The last-named of these facts makes it impossible to assess the value of dihydrostreptomycin therapy in this case. In vitro tests are to be performed to determine the sensitivity to dihydrostreptomycin of the strain of fungus isolated.

SUMMARY

A case of tinea barbae of the deep-inflammatory kerion type is reported. The causative fungus was T. purpureum. Improvement and cure followed the administration of dihydrostreptomycin.

3. Waksman, S. A.: Microbial Antagonism and Antibiotic Substances, New York, The Commonwealth Fund, 1945. Medical Division, Merck & Company, Inc., Rahway, N. J.: Personal communication to the authors.

CASE OF PEMPHIGUS TREATED WITH ACTH

ALBERT RUBIN, M.D.
HARTFORD, CONN.

A review of the literature thus far fails to reveal any reported cases of "pemphigus" treated and cleared with ACTH. There are, however, reviews and resumés listing pemphigus among the diseases in which ACTH has been used with favorable results.

The case which is here reported is one in which the pituitary adrenocorticotropic hormone was used in treatment of a patient with pemphigus and produced rapid clearing of symptoms.

REPORT OF A CASE

C. B., a white man aged 65, with no previous history of illness, manifested a widespread dermatitis in March 1950. This was manifested by an increasingly extensive erythematous, edematous, oozing, crusted eruption on the legs, ankles, thighs, forearms and arms. There was also a spreading, dry, red, scaling rash on the lower part of the back and on the abdomen. Itching was present but was not severe.

Treatment, prior to the time the patient came to me, had included several courses of poison ivy injections, administration of numerous antihistamine drugs by mouth, and application of a variety of lotions, such as calamine and rhulitol® (an aqueous-glycerin-alcohol solution con-

taining tannic acid, 5 per cent; isopropyl alcohol, 37 per cent; chlorobutanol, 1 per cent, and phenol, 0.4 per cent, with glycerin, camphor and ammonium alum). The skin condition continued to progress in spite of treatment. The patient had worked as a dipper in an industrial plant for the past 25 years. He had come into daily contact with nitric acid and sulfuric acid and with brass. There was also frequent contact with chromium, cyanides and hydrochloric acid.

The patient was first seen in our office on June 7, 1950. A definite diagnosis could not be made at first because of his occupation and his previous treatment. However, we considered "occupational dermatitis" a probable diagnosis. It was decided to give him 16 capsules of aureomycin, 250 mg. each, taken one every six hours. Continuous soaks with cold aluminum acetate (Burow's) solution, diluted 1 : 20, were applied to the legs, and a thin antipruritic lotion, with resorcinol and camphor, was applied to the back and abdomen. In one week there was a decided improvement, especially in the condition of the lower extremities. The crusting, oozing and redness and swelling seemed to have disappeared from the legs. There were visible on examination on June 24 many large, superficial bullae, with thin, flaccid walls, on the legs and thighs.

On July 5 the patient was admitted to the Mount Sinai Hospital of Hartford with a tentative diagnosis of "pemphigus." New bullae continued to make their appearance on the ankles, legs, thighs, arms, forearms and abdomen and when they ruptured left red, oozing areas. At a later date the throat became diffusely red, swollen and interspersed with white areas. There was some pain on swallowing. Itching was an annoying symptom, especially over the back and abdomen. The Nikolsky sign was elicited. Two Pels-Macht tests were made and revealed an index of 48. According to the interpretation this reading was positive for pemphigus. The laboratory studies revealed an increase in the number of eosinophils to 17 per cent. This returned to the normal range. Other blood and urine studies gave normal results.

During the early part of the patient's hospitalization treatment consisted in the administration of antibiotics, such as aureomycin and penicillin injections, and in local medication in the form of compresses. Tannic acid compresses seemed more efficacious than soaks with potassium permanganate, aluminum acetate or boric acid solution. For a short time, there appeared to be a lessening in the number of bullae formed, only to be followed by a recurrence.

On August 29 ACTH injections were commenced. It was decided to start with a dosage of 10 mg. every six hours. Variations in the amount were to be made on the basis of the results. In a period of two days, most of the bullae disappeared, the throat cleared completely and the patient felt very much improved. The injections were continued for five days, and then, completely free from bullae, the patient left the hospital. There were no side effects from the medication. At home, medication was reduced to three injections of 10 mg. during 24 hours. On or about September 8 the number of injections was further reduced, to two, of the same dose, during the 24 hour period. Several new bullae made their appearance on the arms and legs, and there was also a slight recurrence of the redness of the throat, in which several white areas were located. The patient maintained treatment at the last-mentioned level. He continued to have a few bullae on the legs. The arms were completely cleared, and the throat was slightly red but not painful. On September 27 the patient decided to discontinue the ACTH injections. On our examination of October 3 he had one small bulla on his right arm and slight redness of the throat. The rest of his skin was completely clear except for areas of pigmentation on the thighs and arms. On subsequent visits, all the lesions were observed to have healed, and the patient returned to work on October 16. At the time of writing, November 15, 1950, he was clear of any symptoms.

CONCLUSION

A case of pemphigus that showed dramatic improvement with the administration of ACTH is reported.

The eruption was present from March to August 29, showing slight change with local medication and administration of antibiotics. A pronounced improvement from August 29 to September 27, after the institution of treatment with ACTH, was apparent.

ADDENDUM.—On May 3, 1951, the patient was still completely free from any symptoms.

242 Trumbull Street (3).

FIXED DRUG ERUPTION AND EPIDIDYMITIS DUE TO ANTIPYRINE

HUGH McCULLOCH, M.D.
and
I. ZELIGMAN, M.D., D.Med.Sci.
BALTIMORE

Brocq [1] in 1894 introduced the term "fixed drug eruption" to denote an unusual form of eruption produced by the ingestion of antipyrine. The chief characteristic of this eruption was that it recurred in the primarily affected area each time antipyrine was taken. The manifestations were erythematous, pigmentary or vesiculobullous plaques sometimes involving the mucosal orifices. The term "fixed" [2] has since been extended to various types of eruptions, such as urticarial, erythematous or eczematous ones, that reappear in the parent site as a result of the use of a drug. J. Jadassohn [3] extended the term "fixed" to include extracutaneous effects from drugs characterized by the recurrence of symptoms in the original sites in tissues other than the skin or mucous membranes. The case reported below is an example of a typical fixed drug eruption and an unusual extracutaneous effect, an epididymitis, due to the ingestion of antipyrine.

REPORT OF A CASE

W. S., a 64 year old Negro, was admitted to the United States Veterans Hospital, Fort Howard, Md., on Dec. 9, 1948 because of an extensive eruption. Fifteen years before, he had taken 666® cold preparation, and within 24 hours an eruption had developed on the arms, legs, abdomen, back and penis. A similar eruption in the same and additional sites had followed the ingestion of the same preparation 18 months prior to admission. Ten days before admission, the patient again had taken 666® cold preparation for an upper respiratory infection, and within ½ hour pruritus developed in the previously affected as well as in additional areas. Next day, these areas were characterized by numerous erythematous, edematous and hyperpigmented well demarcated plaques, some of which contained central bullae. They were located on the face, neck, chest, back, buttocks, abdomen, upper and lower extremities, scrotum and glans penis. Other than a positive reaction in the Eagle flocculation test, the laboratory observations were within normal limits. The patient had a history of a penile chancre in 1917 with inadequate treatment.

Under a regimen of potassium permanganate baths and the administration of tripelennamine (pyribenzamine®) hydrochloride, 100 mg. four times daily, the eruption gradually receded. The patient also received 50,000 units of aqueous penicillin every three hours, for a total of 3,000,000 units, for the late latent syphilis. Sixteen days after the ingestion of the 666® cold preparation, he complained of swelling and severe pain in the scrotum. Examination revealed tenderness and swelling of the left epididymis. By Dec. 22, 1948 the epididymitis and eruption other than residual hyperpigmentation had disappeared.

Sponsored by the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

Resident in Training in Dermatology and Syphilology, Veterans Administration Hospital, Fort Howard, Md. (Dr. McCulloch), and Attending Physician in Dermatology and Syphilology, Veterans Administration Hospital, Fort Howard, Md.; Instructor in Dermatology, Johns Hopkins University School of Medicine, and Assistant Dermatologist, Johns Hopkins Hospital (Dr. Zeligman).

1. Brocq, L.: Eruption érythémato-pigmentée fixe due à l'antipyrine, Ann. dermat. et syph. **5**:308, 1894.

2. Abramowitz, E. W.: Fixed Eruptions from Various Drugs and Other Agents: Polyvalent Specific Sensitivity, Arch. Dermat. & Syph. **43**:672-677 (April) 1941.

3. Jadassohn, J.: Zur Kasuistik der Arzneischädigungen (Salvarsan, Quecksilber, Wismut), besonders über "extrakutane fixe Nebenwirkungen," Med. Klin. **21**:362-366, 1925.

The 666® cold preparation contains antipyrine, ammonium chloride, magnesium sulfate and citric acid. On Dec. 22, 1948, 1 grain (60 mg.) of antipyrine was administered to the patient without his knowledge of the content or purpose of the medication. Within 60 minutes he experienced severe pruritus in all previously affected sites, and the next day he had an eruption similar in character and distribution to that seen on admission. Twelve days after his ingestion of the test dose of antipyrine, a similar left epididymitis again developed. The patient was discharged seven days later, completely recovered from the epididymitis and the eruption except for residual hyperpigmentation.

COMMENT

J. Jadassohn [3] reported two cases of fixed extracutaneous effects from drugs. One case was that of a female who within 24 hours after each injection of novasurol® (a mercurial preparation, merbaphen U. S. P. XI) had sharply delimited painful areas on the right side of the neck and on the right arm. The other case was that of a male who within a half hour after receiving each injection of bismogenol® (a suspension of bismuth subsalicylate in oil) experienced severe pain in the distribution areas of the right frontal nerve. Haber [4] has recently reported a case of fixed eruption and urethritis due to phenolphthalein. He was able to reproduce both the eruption and the urethritis by experimental administration of the drug. We were unable to find in the literature any other reports of fixed extracutaneous effects from drugs.

Virtually any organ may be the site of an allergic reaction to a drug, but the cause-effect relationship is frequently obscure. The determination of this relationship was facilitated in our case by the presence of the typical fixed drug eruption and by our ability experimentally to reproduce both the eruption and epididymitis by administration of the suspected allergen.

SUMMARY

A case report is presented of a typical fixed drug eruption and an unusual extracutaneous effect, an epididymitis, due to the ingestion of antipyrine. Both the left epididymis and the skin were the shock organs in this allergic phenomenon.

4. Haber, H.: Fixed Eruption and Urethritis Due to Phenolphthalein, Brit. J. Dermat. & Syph. **62**:22-25, 1950.

PALMAR PSORIASIS

M. H. SAMITZ, M.D.
AND
J. J. ALBOM, M.D.
PHILADELPHIA

This paper has a threefold purpose: (*1*) to corroborate the frequent occurrence of a topographical variant of psoriasis described by Senear and Caro,[1] (*2*) to ascertain whether the involved sites matched any of the characteristic patterns depicted by Waldbott and Shea in their classification of patterns on the hands following exposure to and contact with various substances and (*3*) to determine the relationship of trauma (Koebner phenomenon) as a causal factor of this localized type of psoriasis.

Senear and Caro [1] reported an entity of nonpustular psoriasis characterized by the presence of sharply outlined patches on the extensor surfaces of the joints, sides of the fingers, finger tips, or palms. A characteristic saucer-shaped dell was noted in the palmar lesion. The dry scale of the lesions was typically silvery on scraping. There was a tendency toward fissuring, and, consequently, painful finger tips might be noted. The biopsy was diagnostic for psoriasis, and

1. Caro, M. R., and Senear, F. E.: Psoriasis of the Hands: Nonpustular Type, Arch. Dermat. & Syph. **56**:629-633 (Nov.) 1947.

the entity was extremely resistant to treatment. No statistics of incidence were cited by these authors.

Waldbott and Shea [2] attempted to show in their paper a characteristic pattern occurring on the hands after exposure to and contact with various substances. Their classification was made chiefly according to the object which was responsible for the lesion, and the design furnished a clue to the cause of the lesion. The types of lesions encountered in their designs, however, were not described. It is presumed that the lesions were eczematous, for the causal agents were either primary irritants or epidermal sensitizers. It is also possible that some of the eczematous reactions were of the chronic fissured type, and such a picture could very well simulate the atypically distributed psoriasis described by Senear and Caro.[1]

It is also an established fact that lesions of psoriasis may develop in areas of skin irritated by mechanical, physical or chemical agents. This isomorphic response was accurately described by Koebner and is known as the Koebner phenomenon.[3]

In a recent study of 403 cases of eczematous and pustular eruptions of the hands,[4] five cases of pustular psoriasis were reported. This group of 403 cases was part of a total group of 533 cases of hand eruptions seen. In the remaining 130 cases, 14 cases of papulosquamous psoriasis were observed. An additional case was added to this group after the above study was completed. This finding indicated the more frequent occurrence of the localized papulosquamous variant over the infrequent pustular psoriasis (3:1).

In the 15 cases reported, papulosquamous psoriasis was seen almost three times as frequently in men (11:4) as in women. All the patients showed bilateral involvement; all cases were of a chronic nature, having persisted for many months or years, and in all instances the psoriasis affecting other localities was of a mild degree and often scarcely perceptible. In several cases the psoriasis of the body developed subsequent to the patient's visit to the office.

In comparison of the patterns presented by this group of cases with the preliminary classifications set forth by Waldbott and Shea, similarities were noted as follows:

1. C. O., a wall scraper—the handling of the tool produced an outline similar to that produced by the screwdriver handle in Waldbott and Shea's classification.

2. H. L., a push cart peddler—the pressure of the hands on the cart's handles produced lesions in areas similar to the distribution patterns for the athlete's bar and stair rail.

3. S. O., a bartender—distribution of the lesions fit in the central palm pattern corresponding to the area of contact with the bar tap.

4. R. C., a seamstress—the distribution was similar to but an accentuated form of the hairpin type.

5. D. C., an optician—the pattern illustrates the light grip type of distribution; in addition, there are findings simulating those in the screwdriver type.

The other 10 cases showed no similarities to patterns described by Waldbott and Shea.

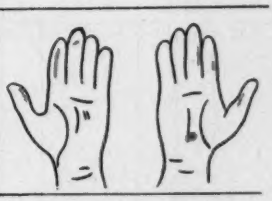
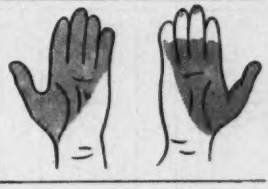
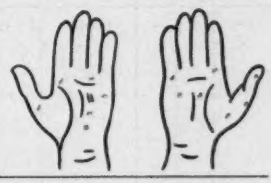
The relationship of friction and trauma (Koebner phenomenon) was seen in six cases (40½). In none of the remaining nine cases was a causal relationship demonstrated. The Koebner phenomenon was seen in the seamstress, the condition of whose hands improved while she was on vacation; in the paper hanger, who on retirement showed evidence of diminished involvement; in the pushcart peddler, whose lesions improved while he was hospitalized for a coronary artery episode; in the fur operator (a cellist by avocation), who noted improvement in the condition of the plucking hand when he held his musical career in abeyance for a short period, and in the optician, who palmed the head of a screwdriver in his right palm in the performance of his duties.

---

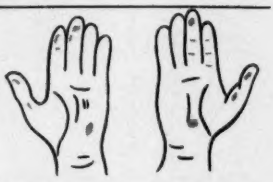
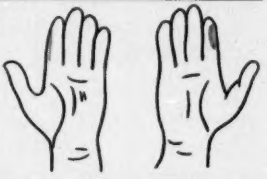
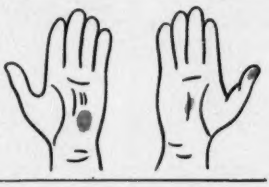
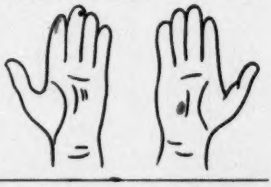
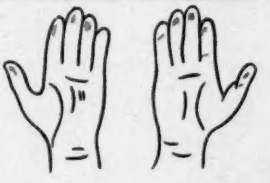
2. Waldbott, G. L., and Shea, J. J.: Causative Diagnosis of Contact Dermatitis: A Classification of Patterns on the Hands, Arch. Dermat. & Syph. **57**:975-984 (June) 1948.

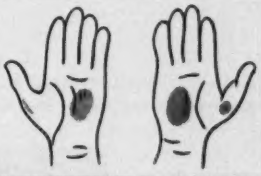
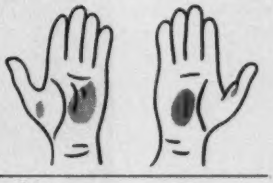
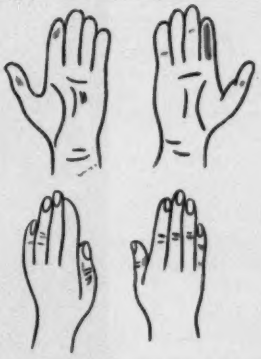
3. Bizzozero, E.: Koebner Phenomenon in Psoriasis, Ann. dermat. et syph. **3**:510-529 (June) 1932; abstracted in The Practical Medicine Series, Chicago, The Year Book Publishers, Inc., 1932, pp. 100-103.

4. Samitz, M. H., and Albom, J. J.: Incidence of Eczematous and Pustular Eruptions of the Hands, Ann. Allergy **9**:336-345 (May-June) 1951.

Patient	Sex	Age	Occupation or Avocation	Duration of Symptoms	Site of Psoriasis Elsewhere	Previous Treatment Local	Previous Treatment X-Ray	
D.S.	M	47	Mortician	8 mo.	Right elbow	x	x	
C.O.	M	69	Paper hanger and wall scraper	8 mo.	Scalp	x		
H.L.	M	65	Pushcart peddler	10 yr.	Scalp	x		
F.C.	M	45	Executive	10 yr.	Trunk (guttate lesions)	x	x	
L.B.	M	44	Fur operator; cellist (avocation)	11 yr.	Left elbow	x	x	

Data concerning fifteen cases of palmar psoriasis and sketches indicating distribution of lesions on hands.

Patient	Sex	Age	Occupation or Avocation	Duration of Symptoms	Site of Psoriasis Elsewhere	Previous Treatment Local	Previous Treatment X-Ray	
A.L.	M	70	Retired	20 yr.	Soles; perianal region	x		
E.M.	M	40	Executive (wholesale grocer)	2 yr.	Scalp; nails	x		
S.O.	M	23	Bartender	20 yr.	Left elbow	x		
M.R.	M	40	Pharmacist	4 yr.	Penis	x		
M.W.	M	38	Theatrical agent	2 yr.	Scalp; penis; nails	x	x	

Patient	Sex	Age	Occupation or Avocation	Duration of Symptoms	Site of Psoriasis Elsewhere	Previous Treatment: Local	Previous Treatment: X-Ray	
R.C.	F	60	Seamstress	10 yr.	None	x		
L.M.	F	22	Waitress	2 yr.	None	x		
A.T.	F	26	Stenographer	4 yr.	None	x	x	
C.M.	F	50	Saleswoman	1 yr.	Olecranon processes	x		
D.C.	M	27	Optician	1 yr.	Scalp; olecranon regions; penis; nails	x		

SUMMARY

Fifteen cases of papulosquamous psoriasis are reported. The greater frequency of this disease in comparison with pustular psoriasis is tsressed. A comparison with hand patterns as described by other authors is made. The Koebner phenomenon was noted in less than half the cases.

1715 Pine Street.

ALOPECIA AREATA OCCURRING IN TWO BROTHERS AND TWO SISTERS

EUGENE S. BERESTON, M.D.
and
HARRY M. ROBINSON Jr., M.D.
BALTIMORE

Alopecia areata occurring in brothers and sisters is apparently rare. Hollander reported the occurrence of this disease in a father and daughter.[1] The scarcity of literature on such findings

Alopecia areata occurring in sisters.

prompted us to record the cases of two sisters in one family and two brothers in another family who acquired alopecia areata.

The two sisters, Negro, were aged 7 and 11. The 11 year old first manifested alopecia areata in 1947, with several typical patches, and, two years later, alopecia totalis. After two years her

From the Department of Dermatology, University of Maryland, School of Medicine.

1. Shelton, J. M., and Hollander, L.: Alopecia Totalis in Father and Daughter: Report of Cases, Arch. Dermat. & Syph. **46**:137 (July) 1942.

hair returned while she was under therapy with ultraviolet radiation and massage. In January 1950 she acquired bald areas, and the condition is still present. Her younger sister, aged 7, manifested alopecia areata in 1948, while the disease was still present in the older child (figure). Alopecia totalis occurred, but the hair was regrowing at the time of writing. Serologic tests for syphilis in both cases gave negative reactions, and the general health was excellent. Wood's light examinations revealed no fluorescence. At the time of writing, both patients were regrowing their hair with ultraviolet irradiation as the only therapy.

The other two cases were in brothers, and their records were as follows:

One patient was a 24 year old second year medical student, first seen by us on Jan. 31, 1948. The lesions were located on the back of the head and consisted of a well defined area of complete alopecia covering the occipital area. There was complete absence of any active inflammatory process in this lesion. Examination under the Wood light revealed no fluorescence. The patient was a highly nervous person who was under decided emotional stress due to the pressure of his school work. He was treated with ultraviolet radiation therapy and the phenol-alcohol procedure. On Jan. 1, 1949 hair had completely regrown in the involved areas.

His brother, a 30 year old regular Army officer, was first seen on Aug. 16, 1950 complaining of a progressive loss of hair which had begun in April 1950. He was under great emotional strain at that time due to the fact that he had just received orders as to a change in status and was to be sent overseas in the very near future. On the right side of the head, involving the temple and most of the parietal area, there was a well defined area of complete alopecia. No evidence of any active inflammatory process was present. On the top of the head, the left side and the back there were numerous discrete areas of similar character. Examination under the Wood light revealed no fluorescence. The same treatment was advised as for his brother. No follow-up was obtained.

SUMMARY

The rare finding of alopecia areata in brothers and in sisters is reported.

SIMULTANEOUS CONDYLOMATA ACUMINATA AND CONDYLOMATA LATA

Report of a Case

HELEN TAYLOR DEXTER, M.D.
and
EVELYN M. ROCKWELL, M.D.
CINCINNATI

The problem of differential diagnosis arises frequently between condylomata acuminata and comparable lesions of other diseases, especially condylomata lata. A patient treated recently in the Cincinnati General Hospital presented condylomata acuminata and condylomata lata simultaneously.

REPORT OF CASE

R. S., a 21 year old Negro, was referred to the Cincinnati General Hospital Venereal Disease Clinic because of a positive serological reaction for syphilis and perianal lesions, some of six months' duration and some of 10 days' duration. He had received no previous treatment of any sort. There was a history of pederasty. Physical examination revealed several perianal lesions which in spite of a superficial similarity could be divided into two general groups. One type was verrucous with distinct pedicles (fig. 1 *A*), and the other was papular with the flat eroded surfaces characteristic of condylomata lata (fig. 1 *L*). A tongue blade could be inserted beneath the edges of the lesions of condylomata acuminata but not beneath those of the condylomata lata. Dark field examination of serum from the lesions showed numerous Treponema pallidum organisms in the specimen from the flat papular lesions and no Treponema pallidum in the

From the Department of Dermatology and Syphilology of the College of Medicine of the University of Cincinnati, Leon Goldman, M.D., director.

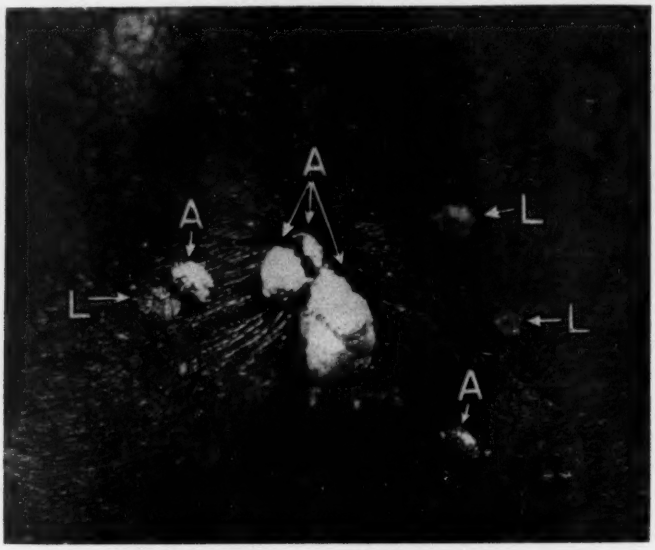


Fig. 1.—Perianal lesions before therapy. *A* condylomata acuminata; *L*, condylomata lata.

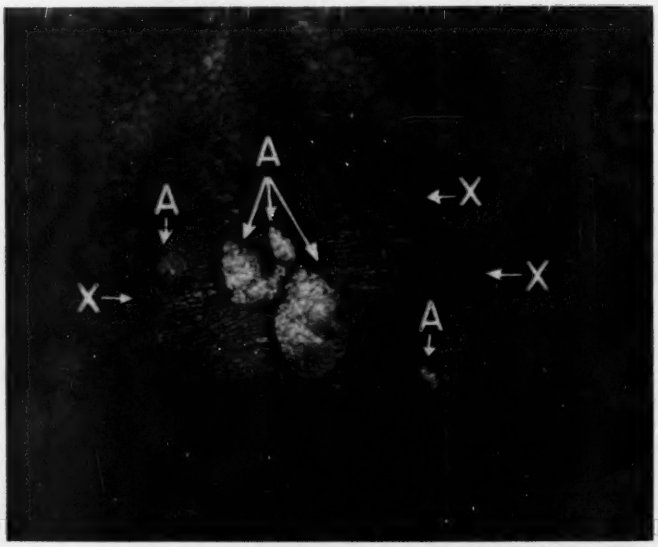


Fig. 2.—Perianal lesions after penicillin therapy. *A*, condylomata acuminata; *X*, location of healed condylomata lata.

specimen from the more verrucous lesions. The latter, however, revealed Borrelia refringens. The serological reaction for syphilis was positive, with a titer of 140 Kahn units. The patient was treated with penicillin intramuscularly by the hypospray jet injection apparatus, 300,000 units a day for nine days, for a total of 2,700,000 units (an experimental type of therapy under study here). At the end of that time all lesions of the condyloma latum type had disappeared. Those characteristic of condyloma acuminatum remained (fig. 2). These were subsequently treated in the clinic with weekly applications of 20 per cent podophyllin (resin of podophyllum N. F.) in tincture of benzoin. After eight weeks all the condylomata acuminata were gone. The serological reaction for syphilis became negative within 12 weeks. Psychiatric consultation was had, and psychotherapy was given.

This case is presented primarily to emphasize the difference in morphology, etiology and therapeutic response which may serve to distinguish condylomata acuminata from the condylomata lata of early syphilis occurring in the same patient.

SUMMARY

A case of simultaneous perianal condylomata acuminata and condylomata lata in a sexual pervert is described. The factors of differential diagnosis are emphasized and the variations in response to therapy noted.

CHLORCYCLIZINE HYDROCHLORIDE OINTMENT IN PRURITIC DERMATOSES

SAMUEL AYRES III, M.D.
and
SAMUEL AYRES Jr., M.D.
LOS ANGELES

Various antihistaminic drugs have been incorporated in ointments or lotions for local use in the control of pruritic dermatoses of both allergic and nonallergic etiology. A considerable degree of symptomatic relief has been reported, although the present consensus of most investigators is that these drugs are of very limited value when applied locally in severe and extensive cases of atopic dermatitis (disseminated neurodermatitis). Their most conspicuous success has probably been in lichen simplex chronicus (localized neurodermatitis), a nonallergic disorder, apparently because of a direct local anesthetic action, which thus helps to break up the "itching-scratching" vicious cycle and frequently results in a favorable response by helping the patient to help himself. Many cases of pruritus ani, pruritus vulvae and pruritus scroti have responded for similar reasons.

However, there has been, unfortunately, an increasing number of reports of an all too high incidence of sensitization to the locally applied antihistaminic preparations. We have also observed this phenomenon with the currently available products to an extent which has caused us to discontinue their use.

Chlorcyclizine hydrochloride has been generally available for oral use as an antihistaminic preparation. Comparison of it with other antihistaminic drugs administered orally is beyond the scope of this communication. However, it is pointed out by the manufacturer that chlorcyclizine hydrochloride is quite different in chemical structure from the other antihistaminic compounds. Its chemical formula is N-methyl-N'-(4-chlorobenzhydryl)-piperazine monohydrochloride.

We have used 1 per cent chlorcyclizine hydrochloride in a greaseless ointment base for over one year in the treatment of several hundred patients with many different types of pruritic dermatoses. It is not our purpose at this time to attempt a completely objective report on the relative efficacy of this preparation as compared with other antihistaminic drugs applied locally. It can, however, be stated very definitely that it gave a satisfactory degree of relief in many cases, especially in lichen simplex chronicus (localized neurodermatitis) and in pruritus ani, vulvae and scroti. It has been especially helpful in treatment of localized neurodermatitis of the nuchal area, seen more frequently in women (so-called nuchal eczema). It should not be inferred, however, that it was necessarily the most effective form of local therapy in these conditions. In some instances it gave more relief than any other local medication used, while

in others it was not as effective as some other forms of local therapy, i. e., medications other than locally applied antihistaminic compounds.

It was not the only mode of therapy in most cases, inasmuch as oral doses of antihistaminic preparations, fractional doses of superficial x-ray therapy and calcium injections, among other forms of treatment, were frequently given concurrently. However, its efficacy was frequently demonstrated when a placebo consisting of the ointment base in an identical tube was substituted, unknown to the patient. Invariably, even though the other modalities of treatment were continued, the patient was immediately aware that a change had been made.

It has been found that, as is often the case with greaseless ointment bases, the preparation was frequently not tolerated on raw, moist or eroded surfaces. Thus, some patients with cases of pruritus vulvae with decided erosion, excoriation or eczematization complained of burning on application of the preparation and were unable to tolerate it even though patch test reactions to it were negative. This situation likewise existed in cases of acute and subacute contact dermatitis, in which it was generally not tolerated, and, as usual, the most satisfactory results were obtained from the use of cool wet compresses of boric acid, aluminum acetate or the like.

However, we have not to date observed a single case of contact sensitization due to the local use of chlorcyclizine hydrochloride, in spite of the fact that some patients have used the preparation over a period of several months. In addition, several hundred prophetic patch tests to it have all elicited negative reactions.

No doubt, as time goes on and as the number of patients exposed to it increases, as with virtually all drugs, a certain incidence of sensitization may be expected to chlorcyclizine hydrochloride. However, it seems significant that, as compared with the other locally applied antihistaminic drugs, it is at least as effective as any other in relieving pruritus, and from this preliminary investigation it would appear that the incidence of sensitization will be much lower. A longer period of observation on a much larger number of patients will be required before final conclusions can be drawn.

The chlorcyclizine hydrochloride ointment was supplied by Burroughs Wellcome & Company (U. S. A.), Inc., Tuckahoe, N. Y., under the name perazil® ointment.

2007 Wilshire Boulevard (5).

SOLITARY MOLLUSCUM CONTAGIOSUM IN ADULTS

NORMAN TOBIAS, M.D.
ST. LOUIS

Molluscum contagiosum is a fairly common, easily recognized type of epithelial tumor in children and young adults. In this group of subjects the lesions are practically always multiple, often appear in crops and favor the trunk, genitalia and buttocks. The pinkish, flesh-colored, pearly or yellowish white semiglobular, shiny lesions with the umbilicated centers, containing a tiny central aperture, are usually diagnosed without the aid of a biopsy.

Rarely, atypical types may come to the attention of the dermatologist: (1) the papular or acuminate, (2) the pedunculated, (3) the corneous and (4) the giant type, which may resemble squamous cell carcinoma. To this group I should like to add the senile solitary type,[1] which has not received sufficient attention in the literature. R. Cranston Low [2] did not discuss this phase of the subject in his excellent review.

From the Department of Dermatology and Syphilology, St. Louis University, Dr. G. V. Stryker, chairman.

1. Tzanck, A.; Sidi, E., and Melke, G.: Trois cas de molluscum contagiosum unique, avec réaction ganglionnaire importante (importance du cytodiagnostic), Ann. dermat. et syph. **10**:263-267 (May-June) 1950.

2. Low, R. C.: Molluscum Contagiosum (Honyman Gillespie Lecture), Edinburgh M. J. **53**:657-670 (Dec.) 1946.

Recently two cases of solitary molluscum contagiosum lesions in older adults have come to my attention. The appearance, localization and chronicity clinically suggested a cystic basal cell carcinoma until biopsy proved the lesions to be molluscum.

Case 1 was in a 46 year old woman, who presented a solitary semitranslucent pseudopapule, 3 mm. in diameter, just below the right eyebrow. The lesion had started as a "pimple" five months previously, and, after attaining the size observed at the time of examination, it had persisted. There were a few thin crusts on the surface but no central dimple. The patient suggested that she might have acquired the infection in a beauty parlor. She did not recall having had similar lesions in childhood. There was no history of Turkish baths or contact with children having the infection. No new lesions had occurred when the patient was observed six months later.

Case 2 was in a 62 year old man, who presented a noninflammatory pseudocystic lesion, 4 mm. in diameter, on the skin of the right half of the forehead. The lesion had been present for one year but had caused him no inconvenience. Since there was no central dimple and the lesion was fairly hard, it was excised and proved to be molluscum contagiosum. This patient was being treated for chronic psoriasis. There was no history of similar lesions in childhood. (There is probably no immunity to molluscum contagiosum.)

These cases emphasize the importance of performing biopsies on all lesions which suggest carcinoma and of withholding treatment until a definite diagnosis is made. These solitary senile molluscum lesions did not have the usual morphological characteristics observed in children and young adults; they occurred on the face, and clinically they resembled cystic basal cell carcinoma. The presence of an attenuated virus or unfavorable soil was probably responsible for the solitary type of lesion.

634 North Grand Avenue (3).

ECZEMATOUS REACTIONS TO KWELL® (GAMMA BENZENE HEXACHLORIDE)

A. J. REICHES, M.D.
ST. LOUIS

Wooldridge,[1] Cannon and McRae,[2] and Halpern and co-workers[3] have reported on the effectiveness of kwell® ointment (0.5% of gamma benzene hexachloride in a vanishing cream base) as an antiscabietic ointment. It is easily applied, usually effective after 24 hours' treatment, and simpler and less annoying than most of the older preparations used for the treatment of scabies. In spite of the fact that kwell® is often an efficient antiscabietic ointment, eczematous reactions to it do occur. Two such cases are being reported—one, of a mother, and the other, of her daughter—in both of which the patient developed a severe eczematous reaction to this medication.

A white woman 29 years old was treated with the prepared antiscabietic kwell® ointment. A severe papulovesicular reaction occurred 24 hours after medication and within a short time covered her arms, legs, trunk, and buttocks. Her daughter, aged 3 years, developed a similar papulovesicular eruption on the arms, legs, and shoulders. This was not as severe or prolonged.

It is felt that kwell® ointment is an important addition to our armamentarium in the treatment of scabies. Because of the two above-reported cases, however, as well as another case[1] reported, in which similar reaction developed, it is felt that this prepared ointment should be applied with caution. It might be of value to make patch tests on patients with the medication. Certainly one should be aware of possible unfavorable reactions following its use.

---

1. Wooldridge, W.: The Gamma Isomer of Hexachlorocyclohexane in the Treatment of Scabies, J. Invest. Dermat. **10**:363-366 (May) 1948.

2. Cannon, B., and McRae, M.: Treatment of Scabies, J. A. M. A. **138**:557-560 (Oct. 23) 1948.

3. Halpern, L.; Wooldridge, W., and Weiss, R.: Appraisal of the Toxicity of the Gamma Isomer of Hexachlorocyclohexane in Clinical Usage, Arch. Dermat. & Syph. **62**:648-650 (Nov.) 1950.

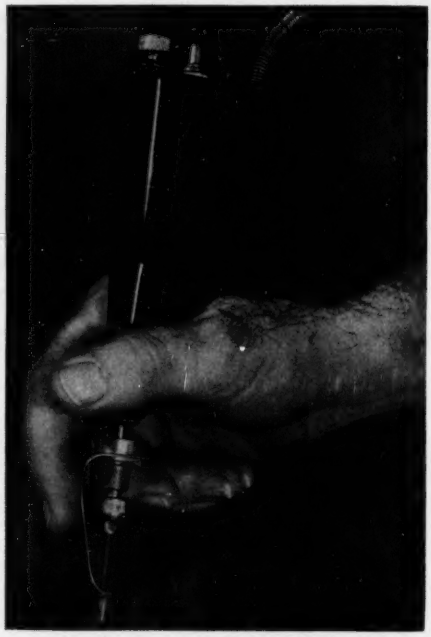
MEDICAL TATTOOING: AN EASILY CONSTRUCTED ELECTRIC MACHINE

OTTO E. L. SCHMIDT, M.D.
SAN MATEO, CALIF.

Dermatologists are called on to repair unwanted professional tattooing or accidental implantation of pigment into the skin.[1]

Hand tattooing with either a single or multiple needle technique is slow and painful. It is also an inexact method, since the depth of puncture is uncontrolled. Dental drills have been used but with much scarring.

"Tattoo artists" construct their own machines of brass tubing and needle rods attached to the clapper arm of a small doorbell type electromagnet operated through a transformer. At



Apparatus for medical tattooing.

times these machines may be bought from their individual makers, but the parts are not standard and the apparatus has an unprofessional appearance.

METHOD

A compact handicraft tool is readily available.[2] It is light in weight, neat in appearance and operates directly from any 110 volt alternating current source.

Dr. Schmidt is Associate Clinical Professor of Medicine (Dermatology), Stanford University School of Medicine, San Francisco.

1. Shie, M. D.: A Study of Tattooing and Methods of Its Removal, J. A. M. A. **90**:94 (Jan. 14) 1928.

2. Vibro-tool,® made by Burgess Battery Company, Lake Zurich, Ill.

This tool has a rapid reciprocating action with adjustable stroke and can be converted easily for medical tattooing (figure). Parts and accessories are standardized and inexpensive; the entire outfit will cost about $10.00.

The needle holder is a small tube-tipped steel leather punch (attachment V82), 1/32 inch in diameter. Into this are soldered one, a group or a row of small sharp steel sewing needles with the points extended to a uniform level. This needle holder is held firmly in the chuck of the reciprocating hammer rod.

The needle guide is made by brazing or soldering the nickled brass tip of an old Luer lock type syringe to the end of a foot gage (attachment V101). It is necessary first to remove the needle flange collar and glass tip collar from the nickled brass tip.

The needle guide is slipped over the needle cluster, and the fork is snapped into place on the adjustable expansion collar. The latter, held by a set screw, determines the level of the needle guide and controls the depth of penetration of the needles into the skin.

In actual operation, the needles in their holder and the needle guide are sterilized and then placed in position. The switch is snapped on in order to see the needles reciprocating the proper distance out through the tip; they appear stationary owing to the rapid motion. When the machine is held almost vertically tattooing proceeds rapidly and almost painlessly.

If desired, a push button may be put into the circuit to give the patient control over the rate of tattooing. Doing so is mainly a psychological maneuver, since the patient rarely interrupts the procedure.

TREATMENT OF SUPERFICIAL PYODERMAS IN CHILDREN

RICHARD E. STRAUSS, M.D.
and
G. DOUGLAS BALDRIDGE, M.D.
PHILADELPHIA

Ammoniated mercury ointment is probably the most widely used remedy for impetigo contagiosa. The sulfonamides and penicillin, streptomycin, and the other antibiotics in ointment form have also been well received as topical therapeutic agents.[1] The unfortunate development of an increasingly large number of sensitization reactions to these ointments has precluded their use in many cases and caused the therapist to look for safer methods of local therapy.[2]

To compare the effectiveness of various methods of treatment in impetigo contagiosa, we have reviewed 126 cases seen at the Children's Hospital of Philadelphia over the past five years. Cases complicated by other skin diseases such as eczema or scabies were not included, and only those patients who were followed to complete healing were considered in the study.

The routine ointment used for local therapy the past two years has been hydrophilic petrolatum. The results with this preparation have been compared with those obtained with the numerous "antibacterial" ointments which were in use for the preceding three years. The latter agents included sulfathiazole, penicillin, bacitracin, nitrofurazone (furacin®), hexachlorophene, ammoniated mercury, 3% ichthammol in ointment form, 1% methylrosaniline chloride and Castellani's paint (contains basic fuchsin, phenol, boric acid, acetone and resorcinol).

Routine instructions to all these patients included directions for the following procedures: (1) soaking of the involved sites with water or saline solution, (2) removal of all crusts after soaking, and (3) application of a prescribed ointment.

From the Department of Dermatology, University of Pennsylvania, Donald M. Pillsbury, M.D., director, School of Medicine, and the Children's Hospital.

1. Livingood, C. S., and Pillsbury, D. M.: Sulfathiazole in Eczematous Pyoderma, J. A. M. A. **121**:406-408 (Feb. 6) 1943.

2. Pillsbury, D. M.: The Management of Bacterial Infections of the Skin, J. A. M. A. **132**:692-698 (Nov. 23) 1946.

RESULTS

A review of these cases indicates that the average time for healing was seven to nine days in patients treated with any of the agents listed, including the hydrophylic petrolatum. The latter agent performed fully as well as any of the "bactericidal" ointments. The main consideration in the treatment of these patients seems to be the removal of crusts from the lesion and the subsequent prevention of their re-formation by the application of an oily vehicle. Hydrophylic petrolatum was used because of its mildness and relatively low sensitizing capacity. There is no reason to believe that it has any special healing properties. In severe cases or those which did not respond to local therapy, the intramuscular administration of penicillin was found to be the most effective method of treatment.

SUMMARY

One hundred twenty-six cases of superficial pyodermas in children are reviewed.

Hydrophylic petrolatum was as effective as the "bactericidal" ointments in the treatment of these conditions.

The important role of débridement of crusts is emphasized.

Penicillin was administered parenterally in severe or resistant cases.

TREATMENT OF PYOGENIC DERMATOSES WITH TOPICAL CHLORAMPHENICOL (CHLOROMYCETIN®)

BEN A. NEWMAN, M.D.
and
FRED F. FELDMAN, M.D.
LOS ANGELES

The list of topical antibacterial preparations used for the treatment of pyogenic infections of the skin continues to grow. Some of the most effective topical agents in common use are ammoniated mercury, chlorhydroxyquinoline, iodochlorohydroxyquinoline (vioform®), nitrofurazone (furacin®) acriflavine, sulfonamides, penicillin, bacitracin, and aureomycin. The aim has been toward the development of topical agents which would be effective against a wide range of micro-organisms and at the same time have a low index of sensitivity. The sulfonamides and penicillin have fallen into disrepute because of the high incidence of sensitization seen following their use. Miller and co-workers[1] state that in early use penicillin sensitized 6% of patients; sulfonamides, 5%, and nitrofurazone, 5%. The newer antibiotics, such as bacitracin and aureomycin, incorporated into ointment form appear to be approaching more nearly the ideal type of topical antibacterial medication because of their apparent low index of sensitivity as well as their effectiveness.

Recently we have been investigating the action of a preparation of chloramphenicol (chloromycetin®) in cream form against a variety of pyodermatoses. One per cent chloramphenicol was incorporated in an oil-in-water emulsion composed of the following: cetyl alcohol, petrolatum, sodium lauryl sulfate (duponol® C), propylparaben (propyl parahydroxybenzoate), and distilled water.

Although the number of patients treated with chloramphenicol cream is not large, we were so impressed with its clinical effectiveness and the abscence of sensitivity reactions that we feel a preliminary report is warranted.

From a group of approximately 100 patients with various types of bacterial infections of the skin only 51 were able to be followed so that conclusive information as to their response to

---

The chloramphenicol (chloromycetin®) cream was supplied by Parke, Davis & Company.

From the Departments of Dermatology, Los Angeles County General and Cedars of Lebanon hospitals.

1. Miller, J. L.; Slatkin, M. H., and Johnson, B. A.: Evaluation of Bacitracin in Local Treatment of Pyogenic Infections, Arch. Dermat. & Syph. **60**:106-120 (July) 1949.

therapy could be obtained. The patients studied were derived from our private practice as well as from the clinics at the Los Angeles County General and Cedars of Lebanon hospitals. Patients were instructed to rub the cream into the affected areas, for one minute, three to four times daily.

The results obtained are summarized briefly in the accompanying table. As might be anticipated, the most dramatic results were obtained in patients with impetigo contagiosa. In that group nine of 10 patients treated were clinically cured in three to five days. Eleven of 12 patients with acute superficial folliculitis of the beard were cleared in less than one week. Three of four patients with retro-auricular, seborrheic-like, streptococcic dermatitis were likewise free of their eruption in less than seven days.

Of five patients with deep chronic folliculitis of the beard one patient was cleared. Two showed marked improvement, although they still developed new lesions, and two patients were unimproved.

The response of patients with infectious eczematoid dermatitis and impetiginized dermatoses was satisfactory.

Patients having pustular psoriasis, acne keloidalis, chronic paronychia, acrodermatitis continua, and acne varioliformis showed unsatisfactory responses.

Contrary to our expectation, no eruption was aggravated by the application of chloramphenicol cream, nor were any instances of eczematous contact dermatitis seen. One hundred con-

Results of Treatment of Pyogenic Dermatoses with Chloramphenicol Cream

	Number of Patients	Clinically Cured	Marked Improvement	Moderate Improvement	Unimproved
Impetigo contagiosa	10	9	..	1	..
Infectious eczematoid dermatitis	9	3	3	3	..
Pustular psoriasis	1	..	..	..	1
Acne keloidalis	1	..	..	1	..
Paronychia	3	..	1	1	1
Acrodermatitis continua	1	..	..	..	1
Acute folliculitis of beard	12	11	1	..	..
Retroauricular streptococcic dermatitis	4	3	1	..	..
Chronic folliculitis of beard	5	1	2	..	2
Impetiginized dermatoses	4	1	2	..	1
Acne varioliformis	1	..	..	..	1

secutive patients were dressed with chloramphenicol cream after surgical procedures. No instance of sensitivity occurred in these patients either. Certainly, in spite of our observations, some instances of contact sensitivity reactions to either chloramphenicol or one of the ingredients of the base should be anticipated. It was also noted that healing after surgical procedures was not retarded by the cream and in no instance was there secondary infection.

COMMENT

It is our impression, even though the number of treated patients is small, that chloramphenicol cream is the best topical antibiotic preparation we have used to date for acute, superficial bacterial infections of the skin. We feel that it is no more effective than other local antibiotic compounds for deeper and more chronic processes. Perhaps one of the most significant observations is that no instance of aggravation of the eruptions treated or sensitivity reactions were seen. It is possible that the superiority of this agent may be due to its availability and stability in an oil-in-water cream.

CONCLUSIONS

Fifty-one patients with pyogenic infections were treated with chloramphenicol cream. In no case was aggravation of the dermatosis or a sensitivity reaction noted.

It is our belief that chloramphenicol cream is the most satisfactory topical medication we have used in the treatment of superficial pyogenic infections but is not superior to other topical antibiotic preparations for chronic and deeper bacterial infections of the skin.

Chloramphenicol cream was used as a prophylactic dressing after the removal of skin tumors in 100 patients. No instance of contact dermatitis from use of the cream was seen in this group.

ADDENDUM.—Since this paper has been written and after further use of chloramphenicol cream in 75 additional cases, we encountered one instance of a sensitivity reaction. Dermatitis venenata developed in a 60-year-old woman (M. K.) who had been using chloramphenicol cream for an infectious eczematoid dermatitis of her ears. On patch testing there was a 4 + reaction to chloramphenicol cream and chloramphenicol powder; there was no reaction to the ointment base.

6333 Wilshire Boulevard (48).

TREATMENT OF RECURRENT PUSTULAR ERUPTIONS ("PUSTULAR PSORIASIS") WITH CORTISONE

MAX WOLF, M.D.
and
GORDON C. SAUER, M.D.
NEW YORK

Most dermatologists are familiar with the manifold clinical pictures of recurrent pustular eruptions of the palms and soles. Repeated attempts to improve understanding and interpretation of the condition by distinguishing separate entities or groups have not been successful. The nosologic position of this obscure and therapeutically recalcitrant disease remains uncertain. We had the opportunity of observing a case which responded effectively to the oral intake of cortisone. Since there is no recent reference in the literature to such therapy, this preliminary report is presented.

REPORT OF A CASE

Mrs. L. E., a 52 year old white woman, was first seen by one of us (M. W.) on Nov. 17, 1949. She complained of a painful skin disorder of six months' duration. Her personal and family history were noncontributory. At her first examination she presented, in the center of both soles, nearly symmetrical, ill defined erythematous areas with dry adherent scales. Minute superficial pustules were scattered throughout the exfoliating patches. Some of the pustules were capped by tiny brownish scabs. Several microscopic and cultural examinations for fungi gave negative results. The patient was treated and observed regularly for one year (by M. W.). Psoriatic features were never present. The tendency for recurrent pustule formation on the soles could not be suppressed by x-ray therapy, local application of different ointments, soaks with potassium permanganate or tobacco extract, 10 vaccine injections (staphylo-strepto "serobacterin" vaccine, Sharp & Dohme [each cubic centimeter contains killed sensitized Staphylococcus aureus and albus, 1,000,000,000 each, and streptococci 2,000,000,000]), or by oral administration of terfonyl® (0.167 Gm. of sulfadiazine, 0.167 Gm. of sulfamerazine and 0.167 Gm. of sulfamethazine in each 0.5 Gm. tablet of 5 cc. of suspension), aureomycin or chloramphenicol (chloromycetin®). Itching, swelling and pain of the affected areas persisted.

The patient was admitted to the University Hospital for further investigations on Dec. 26, 1950. The physical examination did not reveal any abnormal condition except the skin changes, which corresponded generally to the original description. Bacteriologic studies of a pustule were negative, and mycelial infection was excluded on the basis of repeatedly negative results of studies for fungi. X-ray studies of the gallbladder revealed that it functioned well and was normal in size and shape. A gastrointestinal series of roentgenograms did not reveal any pathological changes. A search for bacterial foci in sinuses, teeth, tonsils and pelvic organs had completely negative results. The laboratory data were as follows: Blood study results—red blood cells, 3,790,000; white cells, 7,350; neutrophils, 62 per cent; eosinophils, 3 per cent;

From the Department of Dermatology and Syphilology of the New York University Post-Graduate Medical School, Dr. Marion B. Sulzberger, chairman, and the Skin and Cancer Unit of the University Hospital of the New York University-Bellevue Medical Center.

lymphocytes, 33 per cent; monocytes, 2 per cent; hemoglobin, 11.8 Gm.; sedimentation rate, 32 mm. in one hour; urea nitrogen, 13.0 mg.; true glucose, 55 mg.; total cholesterol, 215 mg.; esters, 125 mg., and total esters 58 mg. per 100 cc., and results of urinalysis—normal.

A biopsy of a pustular lesion on the sole was performed. The description by Dr. A. Hyman was as follows: "Just above the lesion the horn cells are parakeratotic. The epidermis shows acanthosis, particularly of rete pegs within which there is a large, rather oval pustule. The floor and sides of this are formed by ragged prickle cells and show exocytosis of polymorphonuclear leucocytes. The roof is formed by edematous prickle cells mixed with inflammatory cells. The lower part of the pustule contains a fibrin network and a thick layer of polymorphonuclear leucocytes with a few scattered and breaking down prickle cells. The cutis just below the lesions shows mild and non-specific inflammatory reaction and some edema. The elastica is basophilic. These findings are essentially consistent, but not diagnostic of pustular psoriasis."

Treatment with cortisone was instituted. The patient received 1,300 mg. of cortisone orally in the hospital from Dec. 27, 1950 to Jan. 5, 1951. The first two days she was given 100 mg. twice daily; the next four days, 75 mg. twice daily; for two days, 50 mg. twice daily, and the last two days, 50 mg. once a day. Cortisone did not cause any side effects. On the second day after the beginning of this therapy the pustules on the soles began to disappear. On the day of the patient's dismissal from the University Hospital (January 5) the affected parts of the soles were free of pustules and showed only slight erythema and minimal scaling. The patient continued with cortisone therapy at home; she took 1,125 mg. from January 5 to 18, the dose for the last five days being 50 mg. daily. On January 19 the patient returned to the hospital for a checkup. Both soles had a completely smooth appearance; the scaling had regressed, and the patient did no complain about any pain or discomfort while walking or standing. A few new pustules had reappeared two days before she came to the hospital. The dose of cortisone therefore was increased to 75 mg. daily. The sedimentation rate had dropped to 13 mm. in one hour.

CONCLUSION

We do not consider this patient cured, since she still requires the hormone. However we thought it worth while to report the favorable response to cortisone in this troublesome dermatosis. By wider application of this new remedy or by use of it in combination with other therapeutic agents, the course of this disease might be completely changed in the future or some new ideas about its pathogenesis might appear.

969 Park Avenue (28).

LUPUS ERYTHEMATOSUS FOLLOWING BURNS FROM HYDROCHLORIC ACID

Report of a Case

GERALD A. SPENCER, M.D.
NEW YORK

Many traumatic factors have been established as precipitating chronic discoid lupus erythematosus. Some of them are direct burns produced by substances such as hot fat, steam, radiant heat, and sunlight. Seven cases were reported to have followed mustard-gas dermatitis.[1] I here report a case of lupus erythematosus which developed from dermatitis produced by muriatic acid. This chemical substance, now known as hydrochloric acid, is used extensively in industry for cleansing and bleaching purposes.

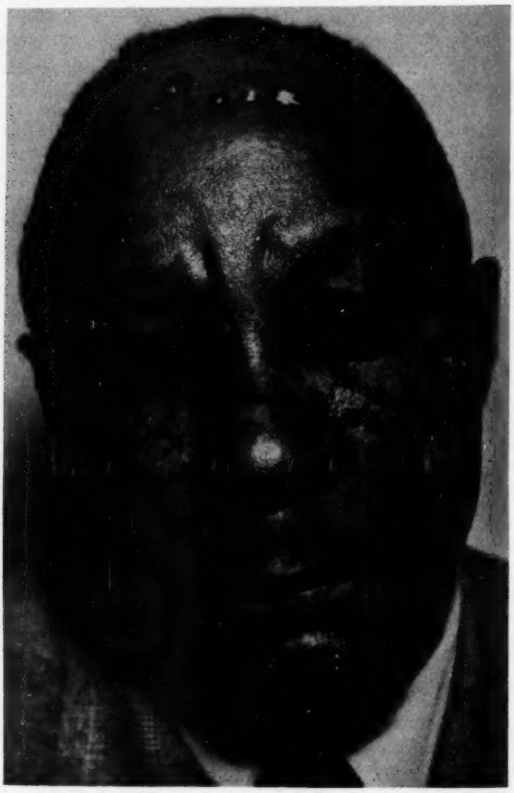
REPORT OF CASE

E. R., a 42-yr.-old Negro who was engaged in the construction industry, was burnt with hydrochloric acid when he was working at the foot of a scaffold which held men who were cleaning the walls of a building. The details of the history are that on May 28, 1950, he accidentally looked up at the men above him and received splashes on his face and forehead

1. Smith, D. K.: External Irritation as a Factor in the Causation of Lupus Erythematosus Discoides, Arch. Dermat. & Syph. **14**:547 (Nov.) 1926.

of the solution they were using. A few hours later he experienced a stinging and burning sensation on his face. The following day he was treated with topical remedies for red and blistering spots on his face. He further stated that the marks produced by the chemical never did heal up completely, as there was always some scaling on the affected spots. Prior to the accident there were no marks on his face.

On Dec. 2, 1950, approximately six months later, on examination he presented some discrete lesions which were compatible with chronic discoid lupus erythematosus (figure). On the forehead there were several guttate leucodermic and hyperpigmented atrophic scars. A few



The discrete lesions of lupus erythematosus represent the original sites of the chemical irritation.

similar lesions were found on the upper lip. On the cheeks and on the nose were discrete erythematous, hyperpigmented, leucodermic, and infiltrated patches, some of which presented follicular plugging. There were no similar lesions on the rest of the cutaneous surface or on the mucous membranes. The serological test for syphilis gave negative results, and the urinalysis and x-ray examination of the chest showed no abnormalities. On Dec. 8, 1950, a biopsy specimen was removed from a lesion on the left cheek. The histological examination (performed by Dr. Wilbert Sachs) revealed the following picture:

The vessels in the midcutis and upper part of the cutis were dilated. There was a tremendous cellular reaction about the follicles and in the upper part of the cutis. Pronounced

interstitial edema could be seen throughout the upper portion of the cutis. There was some basophilic degeneration in the subepidermic region. The epidermis was slightly acanthotic and flattened. The granular and horny layers were present. The palisade layer was entirely washed out. The follicles were dilated and filled with horny plugs. The cellular infiltration was composed of small round and wandering connective-tissue cells. There were a large number of chromatophores. The elastic tissue was missing in the upper part of the cutis and was slightly clumped beneath the epidermis. The microscopic diagnosis of lupus erythematosus was made.

129 West One Hundred Twenty-Ninth Street (27).

SKIN ERUPTION DUE TO CHLORAMPHENICOL (CHLOROMYCETIN®)

HAROLD E. USNDEK, M.D.
WILLIAM P. CURTISS, M.D.
and
EDWIN J. NEILL, M.D.
DETROIT

Inasmuch as skin eruptions due to the internal administration of chloramphenicol (chloromycetin®) apparently are rare and as there are no recent references to them in the dermatological literature, it was felt that the case reported here might be of interest.

The case history is as follows: Mrs. N. B., a 67 year old white, moderately obese woman, was admitted to the medical service of Deaconess Hospital on Jan. 3, 1951. She complained of increasing shortness of breath and increasing cough. On admission she was dyspneic. On physical examination it was found that her blood pressure was 140/80, the pulse rate was 80, no murmurs were heard, the temperature was elevated to 101 F. and minimal crackling rales were heard in both lung bases. The feeling of the medical consultant was that the patient had (1) atypical virus pneumonia involving both lung fields with questionable early fluid formation in the right base, (2) bronchial asthma secondary to pathologic changes in the lung or (3) mild congestive failure compensated with digitalis. On January 23 a dermatological consultation was requested because the patient had manifested a rash 24 hours earlier. On examination she was observed to have an erythematous macular to papular eruption involving the trunk and all extremities, which was only mildly pruritic. The impression was that this was a drug eruption. During this phase of the hospital stay the patient was treated with numerous medications (penicillin, digitoxin, pentobarbital [nembutal®], codeine phosphate, aureomycin, ephedrine sulfate, tripelennamine [pyribenzamine®], diphenhydramine [benadryl®], chloramphenicol, streptomycin and aminophylline). The use of all drugs except chloramphenicol and tripelennamine was discontinued. The rash persisted, and two days later the administration of chloramphenicol was discontinued. The eruption started to fade rapidly, until two days later the attending physician restarted chloramphenicol therapy; then the rash reappeared and was greater in severity. It was accompanied with nausea and vomiting, as a result of which the chloramphenicol treatment was discontinued the following day. As of February 2, the rash was involuting rapidly and was almost entirely gone.

It is felt that this eruption was due to chloramphenicol inasmuch as it started to fade rapidly with the withdrawal of this drug, flared up rapidly and more severely with re-use of this drug and was fading rapidly on the removal of this medication.

Society Transactions

NEW YORK ACADEMY OF MEDICINE, SECTION OF DERMATOLOGY AND SYPHILOLOGY

Maurice J. Costello, M.D., Chairman

Wilbert Sachs, M.D., Secretary

March 7, 1950

A Case for Diagnosis: Pemphigus Vulgaris? Pemphigus Erythematosus? Presented by Dr. A. Benson Cannon.†

I. Z., a man aged 61, of Russian-Jewish descent, was previously presented before this section in March, 1949. In July of that year aureomycin therapy was begun, in a dosage of 2 gm. daily. Within two weeks there was an almost complete remission. In September aureomycin therapy was discontinued for four days and the patient manifested bullae on his neck. It was discontinued for four weeks in January, 1950, and he had a recurrence of lesions on the face and neck. Since Feb. 1, 1950, he has been on a maintenance dose of 250 mg. after meals and 500 mg. at bedtime. No new bullae have appeared, and the patient feels that the use of aureomycin has been the most effective treatment he has ever had. Pruritus returns whenever he fails to take the drug.

Pemphigus Vulgaris Treated with ACTH. Presented by Dr. George C. Andrews.

E. M., a man aged 47, of part-Jewish parentage, was previously presented from the Vanderbilt Clinic before the New York Dermatological Society on Jan. 25, 1949, and before this section in March, 1949. He had improved on aureomycin therapy and was discharged from Presbyterian Hospital. His condition then deteriorated rather rapidly, and he was readmitted on July 13, 1949, with his whole body extensively involved, with bullous lesions on the buttocks and lower extremities for the first time. The oral cavity showed redness, ulceration, and sloughing, with a pseudomembrane formation over the buccal mucosa. On readmission the patient was first given aureomycin orally and then suramin (naphuride®) sodium intravenously without noticeable improvement. The administration of ACTH was begun on Aug. 22 (100 mg. daily), with dramatic response. No new lesions appeared, and all denuded areas began to heal rapidly. There was great improvement in the patient's morale and general condition. The administration of the drug was discontinued after nine days. Improvement continued until all cutaneous lesions had disappeared and the oral lesions were very much better.

Because of phimosis resulting from healed lesions, a dorsal slit was performed on Nov. 18, followed by an explosive exacerbation, which failed to respond to suramin sodium therapy. ACTH administration was resumed on Feb. 2, 1950, the patient receiving 80 mg. daily for 14 days. Even more dramatic response was observed, no new lesions being seen after 12 hr. of therapy.

At present the patient has a few crusting lesions on the trunk, and the glans penis and prepuce are edematous and erythematous. A few small granulations are present on the dorsum of the tongue. The buccal mucosa appears to be in a healing stage.

Extensive Pemphigus Vulgaris Treated with ACTH. Presented by Dr. J. Gardner Hopkins.†

M. G., a Polish Jew aged 59, is presented from the Presbyterian Hospital with a bullous eruption involving the entire body, of one year's duration. In March, 1949, he first noticed "blisters" on his chest and the upper part of the back. Within two months similar lesions involved the entire body, and many were described as pustular. The patient was admitted to

† Dr. Cannon died on Nov. 27, 1950.

† Dr. Hopkins died on Feb. 27, 1951.

another institution, where he was treated with aureomycin, carbarsone, suramin sodium, and chloramphenicol (chloromycetin®); moderate improvement was noted on treatment with the last drug, and it was continued until his transfer to the Presbyterian Hospital. In October, 1949, he acquired an abscess of the left hip region at the site of a crude liver injection; this was incised and drained and has been packed with sterile gauze daily since that time. The patient denied having had oral or penile lesions prior to admission to Presbyterian Hospital on Feb. 14, 1950.

Erythema Bullosum (Pemphigoides) Treated with ACTH. Presented by DR. PAUL GROSS.

E. G., a man aged 68, is presented from the Presbyterian Hospital with a generalized bullous eruption of 10 months' duration. There was erythema, forming large, gyrate lesions sometimes resembling erythema annulare centrifugum except for the presence of intense edema and the development of small and large bullae in the progressing border as well as within the area. Where the erythema had subsided discrete lesions, some of which resembled herpes iris with bullous formation, were seen. There were also bullae arising on normal skin.

Between July 1949 and February 1950 the patient was twice hospitalized and given aureomycin. Although he was never completely free of blisters, his condition improved considerably and the intense pruritus decreased. During the second admission he was given a therapeutic test with sulfapyridine, but there was no response after one week, and he was again given aureomycin. After his discharge the aureomycin therapy was discontinued by his family physician and he was given a special diet. This regimen resulted in a severe relapse. There was only moderate improvement with chloramphenicol and aureomycin therapy.

On Feb. 2, 1950, the patient was readmitted for treatment with ACTH. On the day therapy was begun, from 300 to 400 bullae were present and there were also many crusted lesions. Because of a coronary occlusion two years previously the dose of ACTH was kept at a minimum, averaging from 40 to 50 mg. a day. Nevertheless, improvement was dramatic. The weight curve showed water retention, and euphoria was pronounced. The insomnia disappeared, and the eruption improved rapidly. Treatment was stopped on Feb. 28, and no new lesions have developed since that time. Today the patient shows only residual signs of the previous extensive eruption.

DISCUSSION OF PRECEDING THREE CASES

DR. MARION B. SULZBERGER: It is not to be questioned that these patients have received substantial benefit from ACTH therapy. It remains to be seen how long the benefit will last after medication is discontinued and how long administration of this drug can be continued with safety. It is probable that the "side effects" are rather manifestations of the direct physiologic action of the hormone. Nevertheless, these are remarkably fine and encouraging results in such a disease as pemphigus. Do the presenters agree with me that the fact that a variety of diseases are benefited on the administration of ACTH is no reason to conclude that these diseases are necessarily etiologically related? I have heard reports of several cases of pemphigus treated with ACTH and cortisone without benefit. Are these all the cases of pemphigus treated by the presenters, or were there others that did not respond?

DR. A. BENSON CANNON: The man I presented was treated nine years ago for what appeared to be a classic example of pemphigus vulgaris, and he is still alive and in reasonably good health. In former days we were likely to consider that we had been mistaken in our diagnosis when any patient we had thought to have pemphigus recovered.

DR. J. GARDNER HOPKINS: The man I presented had been under care for months at the Veterans' Hospital. He was in misery, and to see him change in four or five days to a relatively comfortable person is an experience I can't forget. I don't think anybody would maintain these patients were cured. This man had an earlier remission when he acquired an abscess from a liver injection in the buttock, and he improved greatly at that time, although not as much as he did with ACTH therapy. Whether it will be necessary to give a maintenance dose, as is done in arthritis, we can only guess. It would be more interesting if we had any idea of what happened. Any changes we could measure were not impressive. The sedimentation rate came down, and that is about all one could say. These patients seemed to react a little differently from other patients under treatment with the drug. There has been no sudden gain in weight and

no retention of sodium. There is nothing in the hematocrit findings to indicate that in these chronic cases there is the hemodilution that often follows administration of ACTH.

It would seem as though, in working with this drug, we might be able to get a little more light on the pathogenesis of this disease or group of diseases. I beblieve, as Dr. Sulzberger does, that you can't come to any etiologic conclusion. Certainly asthma, pemphigus, arthritis, and other diseases which have been benefited by the administration of ACTH are not the same, but somewhere in their pathogenesis there must be a related mechanism.

As to warnings, there has been one failure. The other warnings, I think, would be a gain in weight, a rise in blood pressure, and more pronounced euphoria. We had a slight warning in this patient when his blood pressure went up to 160.

Dr. George C. Andrews: The strange thing in the patient that I presented was that the Pels-Macht test reaction, which had been positive all along, became negative after ACTH therapy. The serum potassium fell to 2.8 at one time.

Another patient for whom I made diagnosis of pemphigus, although others on the staff didn't agree, has also received ACTH with remarkable improvement. He was covered with bullae but had no lesions in the mouth; he was a gentile. He has now been back at work for three months with no lesions anywhere except on the right leg, where the disease first started.

Dr. Paul Gross: Dr. Sulzberger's questions are pertinent, but if you remember that pathologic changes in the adrenals have been described in pemphigus and some beneficial effects have been observed from the use of cortical extracts, we may be dealing with a more specific action of ACTH in this disease. If in some cases there has been a poor response to the administration of cortisone it may have been due to adrenal insufficiency in the advanced stages of the disease. I agree with those who express caution regarding the final result of this therapy, but I do not know any other remedy today that will bring about a remission of the disease as ACTH does.

Dr. Charles M. Howell Jr. (by invitation): The case in which treatment failed was that of an acutely ill woman of 57. She was started on ACTH therapy and improved dramatically for 48 hr.; then for lack of the drug we were forced to decrease the dose, and she began to slide and continued to do so, even though the dose was later increased. We do feel that patients have been overtreated. The patient Dr. Andrews presented this evening has done just as well on 20 mg. a day as he did on 100 mg. We have watched these patients closely, particularly as to the potassium levels.

Dr. Maurice J. Costello: We treated one case of pemphigus vulgaris with ACTH about six months ago, with indifferent results, probably because the daily dose and duration of treatment were inadequate. Three patients with pemphigus vulgaris have been treated with cortisone, two with healing to date and one with no improvement. A patient with dermatomyositis was unimproved or worsened under treatment with cortisone but responded well to the administration of ACTH, 25 mg. every six hours.

Dr. Gordon Sauer (by invitation): We have one case of the Senear-Usher type of pemphigus. The patient received 5 mg. of desoxycorticosterone acetate intramuscularly and 1 gm. of ascorbic acid intravenously daily and responded very well, although she did not have a complete remission. While the drugs were being given there were no new bullae. The use of the drugs was discontinued because the patient ran a high, spiking fever. She is getting suramin sodium now, but I think she did a little better on treatment with desoxycorticosterone and ascorbic acid.

Lupus Erythematosus Discoides: Laceration Due to Broken Glass as a Factor in the Causation. Presented by Dr. Eugene T. Bernstein.

DISCUSSION

Dr. Louis Tulipan: I accept the injury as a possible cause in this case of lupus erythematosus. I have seen many similar cases, one in particular, in which the patient had had lupus erythematosus for many years previously, with involvement of the mucous membranes. He worked in a laboratory, where he was exposed to a sulfuric acid explosion, and the skin became

involved where there had been no lesions previously. According to the law, it was up to me to cure the side with the new involvement; the rest of the eruption would not be covered by compensation. Fortunately, the condition cleared up anyway.

DR. CHARLES WOLF: Before we can accept a diagnosis of lupus erythematosus following an injury with a piece of glass, we must evaluate the evidence. Is the condition unequivocally a case of lupus erythematosus from the histologic standpoint? Second, we must realize that the patient may have had lupus erythematosus at some time in his life without admitting it. We must be cautious in going on record as saying that a glass cut was followed by lupus erythematosus.

DR. WILBERT SACHS: The case had all the histologic features of lupus erythematosus.

DR. EUGENE T. BERNSTEIN: I presented this case because of its forensic aspects. I based my opinion on the series of events and the fact that the lupus erythematosus occurred at the site of injury, with no patches seen elsewhere. I also based my opinion on the paper presented before the American Dermatological Society in May, 1926, by David Kingsmith of Toronto, wherein it was shown that among 49 cases, 18 had a history of irritation—in two, due to sunburn; in two, to burns from fat; in one, to hair dye; in one, to a burn from a hot-water bottle; in one, to heat from an operating theater, in 2, to laceration, and in seven, to mustard-gas dermatitis incurred while the patients were serving in France. The discussants were Pusey of Chicago and Fred Wise of New York, among others, and their opinon was that such a condition might be elicited.

Urticaria Solare (4,200 to 4,900 A.). Presented by DR. BEATRICE M. KESTEN.

E. A., a woman aged 44, is presented from the Vanderbilt Clinic complaining of wheals following exposure to sunlight, for 39 yr., intermittently. The patient remembers that at the age of 5 she had wheals on her legs after exposure to the sun. She sought medical relief at the age of 12 because hives appeared shortly after exposure to the sun, itched intensely, and lasted an hour or two. At 18, after sitting on the beach in sunshine, she required first aid because of collapse and generalized urticaria. Since then, each summer, she has suffered tremendously: her skin feels hot and dry; she rarely perspires, and erythema develops even in a sunny closed room or on a bright day. If she is exposed to direct sunlight erythema and wheals develop shortly on uncovered and covered skin, itch intensely, and persist for an hour or two. If the exposure is long there is a generalized erythematous swelling of the skin for 24 hr., with intense itching, chills, faintness, exhaustion, and tightness at the base of the skull. She obtains relief by taking a hot bath and remaining in a dark room.

The patient's general health is excellent. There is no family history of a similar complaint.

In our study of the patient, her arms and legs were exposed to direct sunlight in April, 1949, for 15 min. There was immediate erythema over entire areas following exposure. In two minutes there appeared scattered wheals 0.3 to 1.5 cm. in diameter, with intense itching, followed by chills, faintness, and tightness in the head. Exposure to the sun through window glass, by the same technic, produced the same results.

Tests.—Areas of 3 sq. cm. on the back or arms were given various exposures, with and without Corning glass filters. The protective action of sun screens, antihistamine preparations, and carotene creams were studied, with the following results:

A. Effect of Light on Skin

Source	Results		
	Erythema	Wheal	Itching
Sun (5 min.), spring, summer, fall.....	++++	Solid	++++
300-watt "mazda" projection bulb.....	++++	Solid	++++
Mercury-arc ultraviolet lamp.....	0	0	0
Cold-quartz ultraviolet lamp.....	0	0	0
Wood's light.....	0	0	0
Spectrophotometer, 2,000-19,800 A.....	0	0	0
Hot water bag, 4-15 min.....	++++	0	0

Conclusion: Urticaria is produced by wave lengths $>$ 3100 A.

B. Filters (transmitting known wave lengths)

Sources of light—direct sun (2,967-14,000 A.); 300-watt "mazda" projection bulb (4,000-7,600 A.)

Filter—Transmission Corning No.	A.	Results: Erythema	Wheal	Itching
7910	2,200-7,400	++++	++	++
986	2,300-4,200	0	0	0
9700	2,700-7,400+	++++	++	++
7740	2,900-7,400+	++++	++	++
Window glass	3,100-7,400+	++++	++++	++++
3850	3,600-7,400+	++++	++++	++++
3384	4,900-7,400	0	0	0

Conclusion: Triple response is produced in blue-violet irradiation between 4,200 and 4,900 A.

C. Effect of Creams on Skin

Sun screens, antihistamine preparations, and carotene in creams applied to the area, the same source of light being used as in *B*.

Protective Agents	Results: Erythema	Wheal	Itching
"A-fil," para-aminobenzoic acid, "sunarone" W	++++	++++	++++
Diphenhydramine hydrochloride, tripelennamine hydrochloride, chlorprophenpyridamine maleate	++++	++	0
Carotene 30,000 units per gram	++ (immediate)	++ (immediate)	0
50,000 units per gram	+ (delayed)	0	0

Conclusion: Some protection is afforded by carotene, with an absorption spectrum similar to the active spectrums of the triple response.

D. Other Tests: Methacholine chloride iontophoresis (1% solution) produced erythema but no whealing.

Passive Transfer (P. K.)

Two subjects—tested twice—two serums

No. 1.—Strongly positive (solid wheal)

No. 2.—First test, erythema only

Second test, erythema and small wheal

The patient has received internally amprotropine phosphate (syntropan®), 100 mg. three times daily for three weeks, without effect; tripelennamine (pyribenzamine®) hydrochloride, 100 mg. three times daily (summer of 1949), which gave reasonable control, and carotene, 100,000 units daily since Feb. 20, 1950.

Production of a wheal by a five-minute exposure of the patient to a 300-watt "mazda" projection bulb was demonstrated.

DISCUSSION

DR. GEORGE C. ANDREWS: It is interesting that the sensitization could be passed over.

DR. RUDOLF BAER: This is certainly an unusual case, because in the previously studied cases of urticarial light hypersensitivity about which I know and in which wave lengths between 4,000 and 5,000 A. were involved, passive transfer of the sensitivity could not be achieved. I think most observers today have accepted the fact that there are two distinct groups of urticarial hypersensitivity in the range of visible light, namely, urticaria due to wave lengths below 3,600 A. and that due to wave lengths between 4,000 and 5,000 A. The first group is always accompanied with a positive reaction to a passive transfer test but in the second group no passive transfer had been achieved. Dr. Kesten's case is thus the first I know of in which passive transfer has been successful in urticaria due to wave lengths in the 4,000 to 5,000 A. range.

The question of whether the passive transfer is positive or negative is one of the utmost importance, because transferability in one group and lack of transferability in the other group indicate that two entirely different antigens are involved. The present theory is that the radiation energy effects in the skin the release of the actual antigen to which these patients are hypersensitive. The fact that the antigen in the 3,600 A. group is capable of stimulating the production of passive transfer antibodies suggests that this antigen is a large molecular substance, probably a protein, and the fact that the antigen in the 4,000 to 5,000 A. group is usually not capable of stimulating the production of passive transfer antibodies suggests that this antigen is a small molecular substance, probably a simple chemical.

It is very interesting that the presenters were able to achieve a significant degree of protection of the patient's skin by the use of a carotene preparation.

DR. MARION B. SULZBERGER: To date, there are two main types of urticaria solare that have been well studied in reference to circulating antibodies—one caused by emissions below 3,700 A. in which passive transfer is commonly successful, and the other caused by rays above 3,700 A., in which attempts at passive transfer have generally failed. The successful transfer in this case would therefore be unique. The one possible exception is the case reported by Rajka, in which the causal wave length was thought to be between 4,000 and 5,000 A. but its identity was not established with certainty. As Rajka himself stated, "It would be important to know exactly the wave length of the rays to which the patient reacts. In want of the proper filters, this examination could not be finished" (Rajka, E.: Passive Transfer in Light Urticaria, *J. Allergy* **13**:327 [May] 1942). The mechanism by which this antibody is formed and the nature of the antigen to which these patients are reacting and to which the passive-transfer antibodies react are still not known. But I think the theory that Dr. Baer and I most recently described is accepted by most people and would still fit the facts best, namely, that in every normal skin, when its surface is exposed to ultraviolet radiation below 3,700 A. in length, there is produced a substance or substances generally nonantigenic to most persons; however, some persons, i. e., the patients with this form of solar urticaria (due to radiation below 3,700 A.), get sensitized to the newly produced substances and form antibodies to them. When the serum containing these particular antibodies is deposited by injection into normal skin nothing happens until the surface of the skin is irradiated with ultraviolet radiation of 3,700 A. or less and thus there is again produced that antigenic substance which reacts with the deposited antibodies and produces a wheal and flare. The continuing search for this unknown photosensitive pro-antigen and for this presumptive regularly occurring autogenous antigen, which is produced after specific radiation, provides one of the most fascinating aspects of this group of cases.

DR. EUGENE T. BERNSTEIN: May I ask Dr. Sulzberger whether another theory couldn't be advanced, that the actinic ray changed the tissue fluid or cells to such an extent that they might render antigenicity towards the skin as a shock organ, which mechanism could be evaluated in the light of auto-allergy? The question of auto-allergy enters the picture and plays a very important part. I had a patient who came before the Compensation Board because of eczema due to exposure; chorioretinitis ensued, and he became blind. My theory was that the primary exposure to the allergen changed the cells to such an extent that the cells rendered antigenicity to the eye organ, resulting in chorioretinitis. This contention was opposed by many ophthalmologists and dermatologists, and it was then found that in the English literature there were reports published of about five cases in which auto-allergy produced changes in the eye.

DR. BEATRICE M. KESTEN: This patient presents an interesting example of one of the three types of solar urticaria. This one was produced by radiation between 4,200 and 4,900 A. I don't think the positive passive transfer reaction is very important. That the human body would give a positive transfer test reaction at 3,900 A. and not at 4,000 A. has always seemed peculiar to me. Here we have a person whose serum contains antibodies which may be transferred passively and which react to radiation in the blue-violet range with the triple response. This observation confirms the findings of Rajka. Various sun screens which protect from radiation in the ultraviolet band do not protect this patient. Antihistaminic creams are of some value, perhaps because of their action on whealing. It is interesting to find that carotene applied locally prevents the formation of the experimentally induced wheal. It is unfortunate that we cannot demonstrate it tonight. Until this week it has been easy to produce wheals repeatedly by a single exposure to the "mazda" projection bulb. The reason for the inability to produce the wheal and, in another site, to show the protection afforded by carotene may be that the patient has been taking 100,000 units of carotene since Feb. 20.

Lupus Erythematosus. Presented by DR. LEWIS B. ROBINSON.

Keratosis Pilaris; Vasolinoderma (Follicular Type). Presented by DR. LEO SCHWEICH.

Bromoderma Resembling Lymphosarcoma. Presented by DR. GEORGE C. ANDREWS.

Leprosy, Lepromatous Type. Presented by DR. A. BENSON CANNON for DR. MILTON B. SLOANE.

Macular Atrophy Following Lichenoid Tuberculoid Granuloma (Lichenoid Tuberculid? Leprosy?). Presented by DR. GERALD F. MACHACEK.

Mycosis Fungoides with Poikilodermatous Changes (Histologic Picture of Lichen Sclerosus); Panniculitis. Presented by DR. GERALD F. MACHACEK.

Food Allergy of Gastrointestinal Tract Associated with Oral Aphthae. Presented by Dr. Helen O. Curth.
Aphthosis (Abortive Form of Behcet's Syndrome). Presented by Dr. Helen O. Curth.
Urticaria Pigmentosa. Presented by Dr. J. Lowry Miller.
Scleroderma. Presented by Dr. J. Lowry Miller.
Chronic Lymphedema of the Legs. Presented by Dr. William Curth.
Lymphogranuloma Venereum (Esthiomene). Presented by Dr. William Curth.
Lichen Nitidus. Presented by Dr. Leslie P. Barker.
Multiple Idiopathic Sarcoma of Kaposi. Presented by Dr. William Curth.
Prurigo Nodularis. Presented by Dr. F. Philip Lowenfish.

PACIFIC DERMATOLOGIC ASSOCIATION

Harry J. Templeton, M.D., *President*

Harold Orr, M.D., *Vice President*

Walter R. Nickel, M.D., *Secretary-Treasurer*

Ervin Epstein, M.D., *Assistant Secretary*

Oakland, Calif.

Sept. 2, 1950

Urticaria From Synapoidin® Controlled by Ethinyl Estradiol. Presented by Dr. C. J. Lunsford, Oakland, and (by invitation) Dr. Laurance W. Kinsell, Oakland.

J. H., a woman aged 41, because of fatigue, lack of energy and abnormally heavy menstrual flow, received injections of synapoidin® (a proprietary preparation containing both follicle-stimulating and luteinizing hormones). After the fourth injection, in May 1949, a small, itchy area appeared at the site of the injection, and within one week generalized giant hives developed despite many forms of treatment, including elimination diets, intravenous administration of glucose, use of epinephrine, sedation, administration of antihistamine drugs, histamine injections, removal of foci of infection and oral administration of vitamin K.

Because of the onset following the injection of synapoidin® Dr. Kinsell reasoned that the patient might have had a sensitivity to the synapoidin® and as a result had probably become sensitive to her own follicle-stimulating and luteinizing hormones. In favor of this theory was the somewhat cyclic exacerbation of the hives. He therefore prescribed ethinyl estradiol, 0.1 mg. daily, to inhibit the production of gonadotropic hormones. The dose was subsequently increased to 0.2 mg. daily and inhibited ovulation completely, as determined by basal temperature charts. Coincidentally the urticaria disappeared, and the patient remained well until the latter part of May 1950, when she failed to take the ethinyl estradiol for 10 days and the urticaria recurred. When administration of the substance was resumed the hives again disappeared. Recently, with a dose of 0.25 mg. daily, she has been again practically free of lesions.

She has no history of other allergic manifestations.

Original eosinophil counts averaged 480 (twice normal). The last eosinophil count in May 1950 was nearly normal.

Gonadotropin determination (pre-estrogen) was greater than 26 but less than 50 mouse units per 24 hours.

DISCUSSION

Dr. Nelson P. Anderson, Los Angeles: I think the concept that a person might become sensitive to her own internal secretions was first brought out by that brilliant pathological investigator and endocrinologist, Zondek of Aschheim-Zondek fame. The concept is noteworthy. Urbach advanced it further and used a serum prepared from these persons when they were in certain phases of the menstrual period—what phases I do not recall. In the present patient there is an aggravation of the skin condition around the time of ovulation and when ovulation is suppressed there are no hives. Hence it would seem logical to take the blood serum at the portion of the cycle and attempt specific desensitization to the person's own endocrine products rather than to continue with the administration of fairly high doses of a potent estrogenic drug.

DR. MAXIMILIAN E. OBERMEYER, Los Angeles: I do not question the cause and effect sequence described, but I object to the use of words "hypersensitivity" or "sensitization" to a "physiologic hormone." The process, whatever it is, is certainly not identical with ordinary hypersensitization to a drug or other substance as we know it. The concept of hypersensitivity to a physiologic substance is reminiscent of that of hypersensitivity to histamine. I want to emphasize that if the concept of hypersensitivity to one hormone is accepted, similar hypersensitivity to all humoral products—even to epinephrine, for instance—must be postulated. I do not know the mechanism responsible for the urticaria in this case, but I am sure it is not an ordinary hypersensitivity.

DR. HARRY J. TEMPLETON, Oakland: Some years ago I saw a woman with a patch of localized urticaria at the site of an intragluteal injection of estrone in oil. This subsided, only to reappear in situ at the same time in her menstrual cycle the following month. This sequence occurred each month during the four or five month time she was under my observation. It is likely that the skin had been sensitized locally by the injection of the esterone and that it reacted each month to the antigen (estrogenic substance) elaborated by her own endocrine system.

DR. LAURANCE W. KINSELL, Oakland (by invitation): One surprising thing is that more people do not have sensitization to the protein hormonal substances which are injected into them. In the present patient there is little question that one is dealing with a real sensitization to her own pituitary gonadotropins. It would appear that the administration of estrogens in fairly heavy doses was sufficient to produce inhibition of the production of androgens. When administration of ethinyl estradiol was stopped for a brief time, there was a recurrence of the hives. With the resumption of treatment with estrogen the urticaria has not been completely controlled. We have observed this result in other situations in which steroid hormones have been used to inhibit pituitary activity. If one may generalize from this observation it would appear that if one is going to use steroid hormones for inhibitory effects it may be well to continue their administration without interruption for a long period.

Foreign Body Granuloma Due to Protamine Zinc Insulin Injection. Presented by DR. FREDERICK G. NOVY JR., Oakland.

M. L., a 49 year old woman, stated that in 1941 she was given injections of protamine zinc insulin to improve her appetite. In 1946 an abscess developed on the left thigh where insulin had been injected. The organisms recovered from this were similar to those recovered from previous osteomyelitis of the left frontal bone. Some time afterward the patient noticed multiple nodules developing on the thighs. These nodules gradually increased in number and size. They have been slightly painful on pressure but otherwise asymptomatic.

A biopsy specimen from one of the nodules showed a foreign body granuloma in which there are amorphous particles.

DISCUSSION

DR. PAUL A. O'LEARY, Rochester, Minn. (by invitation): The differential diagnosis of the leg lesions suggested two possibilities; the first was suppurative panniculitis, and the second, factitial eruption. The patient said that she had had four or five episodes when these lesions had become inflamed, in association with a febrile reaction which subsided in 24 to 48 hours. Such a reaction could be part of a panniculitis or could be a foreign body reaction if the patient was producing the lesions artificially. I believe she has a panniculitis of the legs.

DR. FREDERICK G. NOVY JR., Oakland: When I first saw the patient I made a clinical diagnosis of either sarcoma or a multiple leiomyoma. I was amazed to see this strange foreign body granuloma with definite amorphic material in it. I think this case is unusual when you consider that actually millions of people take insulin injections and to the best of my knowledge no cases of nodules following injections have been reported.

Mycosis Fungoides. Presented by DR. ERVIN EPSTEIN, Oakland.

H. P. has been seen intermittently since 1938 for psoriasis on his elbows, hands, ears and penis. In May 1948 he had an asymptomatic eruption of three months' duration on his trunk, upper arm and thighs, consisting of large, faintly erythematous plaques tending to follow the

lines of cleavage. This was thought to be parapsoriasis en plaque. A biopsy specimen was diagnosed as parapsoriasis. The patient was next seen in January 1949. At that time, the clinical picture included plaques which were red, weeping, scaly and pruritic. A month later biopsy showed mycosis fungoides. The blood count was normal except for leukocytosis, there being 16,000 white blood cells per cubic millimeter.

The patient was treated with superficial X irradiation and discharged with the lesions in a quiescent state in April 1949. He was seen at the Mayo Clinic in June 1950, at which time biopsy showed parapsoriasis only. At the present time the patient shows erythematous scaly plaques.

A Case for Diagnosis: Reticulum Cell Sarcoma? Mycosis Fungoides? Presented by Dr. Ervin Epstein and (by invitation) Dr. J. P. Belber.

O. A., a 27 year old white carpenter, first entered the hospital Jan. 17, 1950 for an eruption and chronic recurrent lymphadenopathy. About 1943 the patient first noted a dermatitis with dryness, scaling and burning, especially at the waistline and on the buttocks. In 1945 he acquired an acute illness characterized by joint soreness, generalized lymphadenopathy and questionable transient hepatosplenomegaly. He was hospitalized at a Naval hospital in Hawaii and was there found to have moderate generalized lymphadenopathy. His temperature rarely rose to 99.4 F. by mouth. There was moderate leukocytosis at this time. Tests for undulant fever and for antibodies gave negative reactions. Lymph node biopsy was not performed. In 1945, about the time lymphadenopathy developed, the patient noted persistent dryness and redness over the forearms and upper arms. About three or four times a year thereafter the patient had an acute episode characterized by localized adenopathy and soreness in the adjacent joints. These attacks lasted for two to three days and then subsided. In January 1949 there developed a large persistent swelling in the left axilla. A biopsy was performed, but a definite diagnosis was not made at that time. In early 1949 the patient noticed faint fawn-colored plaques scattered over his trunk. These lesions did not itch, though occasionally there was a sensation of burning.

Examination disclosed a scaling dry eruption with atrophy and telangiectasia over the forearms. There was moderate right axillary and inguinal adenopathy. There were several very large nodes in the left axilla. The liver and spleen were not palpable. There were no other significant physical abnormalities.

Laboratory studies, including a chest roentgenogram, complete blood count, urinalysis, serologic tests, bone marrow aspiration and agglutination tests for Brucella and heterophil antibodies, all revealed no abnormality. The skin biopsy specimens were reported as showing chronic inflammation. A lymph node specimen in January 1950 showed reticulum cell sarcoma on biopsy.

Reticulum Cell Sarcoma with Nodules on Chest. Presented by Dr. Ervin Epstein, Oakland, and (by invitation) Dr. George C. Lambert.

DISCUSSION OF THREE PREVIOUS CASES

Dr. Louis H. Winer, Beverly Hills, Calif.: In the case of H. P., I agree with the histologic diagnosis of mycosis fungoides because the infiltrate in the cutis is multiform in character and penetrated into the epidermis. Numerous large monocytes invaded the epidermis, the surface of which was scaly and crusted, as seen in the premycotic stage of mycosis fungoides.

Histologically, the section on O. A. was not typical of mycosis fungoides. The epidermis with its colliquative degeneration of the basal cells was suggestive of parapsoriasis. The multiform, sharply bordered dense cellular infiltrate was suggestive of mycosis fungoides. My impression is that the condition is a parapsoriatic type of mycosis fungoides.

Dr. Norman N. Epstein, San Francisco: When we see a patient with lymphoblastoma, the first problem that presents itself is, should the patient be given so-called specific therapy or not? Many times these patients do well when supportive therapy alone is given. No treatment available today cures lymphoblastoma. X rays, nitrogen mustard and arsenic at times give symptomatic relief, but they do not arrest the condition permanently. At times these procedures seem to do harm, and they should be instituted with caution. If the lesions are growing rapidly, certainly treat them with X rays. If the patient has a great deal of pruritus we should try to relieve it. Otherwise, I think these patients should receive supportive therapy only.

Dr. Paul A. O'Leary, Rochester, Minn. (by invitation): I saw H. P. when he was in the East several months ago and suspected that he had mycosis fungoides. A biopsy specimen was taken from what appeared to be a rather typically indurated plaque. Dr. Montgomery reported the histologic picture as that of a nonspecific dermatitis, possibly parapsoriasis. The patient was seen in our office but once, and so Dr. Ervin Epstein then sent the slide from the biopsy specimen he took; Dr. Montgomery, without knowing the origin of the slide, diagnosed it as classic mycosis fungoides. I do not mean to imply by this observation that patients with parapsoriasis necessarily acquire mycosis fungoides, because I am inclined to believe that mycosis fungoides starts as such and rarely if ever develops from parapsoriasis. The point to be emphasized is that in a patient with mycosis fungoides a biopsy specimen from the periphery of a plaque may show a nonspecific dermatitis whereas one from the more indurated area will show typical features of mycosis fungoides.

The next case, that of O. A., I believe is of poikiloderma, a syndrome which is the result of injury to the cutaneous vascular tree by various noxi, which may include the causative agent of mycosis fungoides or lupus erythematosus or perhaps some other disease. The poikiloderma-like lesions may be present for a number of years before the clinical or pathological evidence of lymphoma appears. Accordingly, poikiloderma, I believe, may be due to various etiologic factors. I agree with what Dr. Norman N. Epstein said about undertreating certain patients with mycosis fungoides, because I have seen patients who have had the disease for more than 35 years. The patients who have a mild form of the disease, which runs a long and protracted course, do not need enthusiastic therapy, as sun tanning will produce a temporary involution of even fungating lesions and will continue to do so for several years. In such cases the X-ray bath may be withheld until the sun tan is no longer effective.

Dr. Ervin Epstein, Oakland: In the case of O. A. the biopsy which Dr Winer described was not from the poikiloderma-like eruption but was from lesions which resembled parapsoriasis and which the patient had had for a number of years. In this patient we had lesions which clinically and histologically were characteristic of parapsoriasis in addition to an eruption which resembled poikiloderma. The patient also had a proved low grade reticulum cell sarcoma. It is felt that these two types of cutaneous lesions could be considered as those of premycosis fungoides occurring in a patient with another type of lymphoblastoma.

Localized Myxedema. Presented by Dr. Ervin Epstein, Oakland, and (by invitation) Dr. A. E. Davis, Oakland, and Dr. Selig Weinstein, Oakland.

B. N., a 51 year old Negro, had a subtotal thyroidectomy for hyperthyroidism in 1945. In January 1950 the left ankle was 1½ inches (3 cm.) larger in diameter than the right ankle and was covered with many small nodules of varying sizes, so that it had the appearance of greatly magnified orange peel. The skin was warm and somewhat moist.

X-ray examination of the skull showed bony defects above both orbits. The blood cholesterol was 137 mg. per 100 cc. A basal metabolism rate was + 30 per cent, and another, two weeks later, was + 35 per cent. Electrocardiographic examination revealed no abnormality. The pathological report on a biopsy specimen taken from the left ankle revealed that the superficial subcutaneous tissue contained irregular, poorly delineated and completely unencapsulated areas of edema. The connective tissue was seen to be fragmented and separated. With special stains these areas gave a faintly eospinophilic reaction compatible with myxomatous tissue. It was seen that the vast majority of the subcutaneous area was completely absent and apparently composed purely of edema fluid. The overlying squamous epithelium was essentially normal although atrophic in certain areas. The tissue beneath the subcutaneous tissue was essentially normal, except for widely scattered chronic inflammatory cells. The pathological interpretation was "subcutaneous edema of skin, compatible with the clinical diagnosis of focal pretibial myxedema."

DISCUSSION

Dr. Ben A. Newman, Los Angeles: There has been a great deal in the recent literature regarding the pituitary thyroid-stimulating hormone which produces a stimulus on the retro-ocular muscles and on the skin, with depositions of hyaluronic acid. I gave one patient cortisone

to counteract the hyaluronidase activity and was amazed to find both a regression of the exophthalmos and complete disappearance of the pretibial myxedema. My patient received relatively little cortisone, 600 mg. in the first course and later an additional 900 mg.

Xanthomatosis. Presented by Dr. R. Raymond Allington, Oakland.

Generalized Xanthomatosis. Presented by Dr. Frank K. Haight, Oakland.

Nevoxanthoendothelioma. Presented by Dr. H. V. Allington, Oakland.

DISCUSSION OF THREE PRECEDING CASES

Dr. James McGinley, San Francisco (by invitation): In his research, published in *Circulation* (**2**:161 [Aug.] 1950), Gofman found that there are certain lipoprotein complexes within the blood stream which vary in size and specific gravity. By the method of ultracentrifugal flotation these are measured by negative sedimentation rate. They are lighter than the fluid in which they were suspended. By measurement of these complexes it was found that there were certain statistical correlations with pathological conditions. The smaller fat molecules, within the S_f 1-10 class, are found in all normal people. Larger molecules, in the S_f 10-20 class, were found in a statistically significant proportion of cases of atherosclerosis, diabetes and hypothyroidism. So far we have seen three cases of xanthoma tuberosum multiplex, and all the patients had very high levels of the S_f 10-20 class of molecules. Above the S_f 20 group are the very large molecules, the so-called chylomicrons, which follow fatty meals, etc., and so far those have not been shown to be of significance. It is very difficult to establish a low cholesterol diet and even more difficult to obtain cooperation from the patients so that they follow the diet carefully.

Dr. Laurance W. Kinsell, Oakland (by invitation): In xanthomatoses we are faced with a question as to whether one is dealing primarily with diseases of phagocytic cells, which gather unto themselves a great number of lipid materials, or with a primary disease of lipid metabolism. My own feeling is that the latter is the correct explanation. I should like to add one thought in regard to Dr. Gofman's work. I think it is of great importance; however, it might be premature to speak of these "molecules" at this time as being "pathological molecules." By and large, statistically, these large lipoprotein molecules are correlated with increased total cholesterol as determined chemically. It may be that the lipoprotein complex (so-called S_f 10-20 complex) is a means of transport of cholesterol and of other related lipids when the blood concentration of these materials exceeds a certain level. Whether one should regard them as actual pathological molecules, things which are significally and specifically related to atherosclerosis or to any other pathological process, is still to be demonstrated.

Dr. Ben A. Newman, Los Angeles: In the past we felt that low fat diet had no effect on the xanthomatoses. In view of Dr. Gofman's recent work proving that on a restricted fat diet the abnormal molecule tends to disappear, it is important for us to urge our patients with xanthomatoses to restrict their fat and entire cholesterol intake.

Necrobiosis Lipoidica Diabeticorum. Presented (by invitation) by Dr. Bernard F. Ryan, Oakland.

Mrs. C. S., a 30 year old housewife, first noticed a small scaling area on the posterior aspect of the right lower leg two years ago. This lesion has slowly enlarged without symptoms other than mild itching. The patient was found to have diabetes mellitus three years ago. During the past three years the diabetes has been properly controlled on a regimen outlined by an Oakland internist. At the present time the patient takes 34 units of regular insulin and 16 units of protamine insulin daily. She has been on a weight reduction diet during the past several months. She has at times complained of "aching legs," which were attributed to her varicose veins. She received injection treatments for these varicosities in 1943.

There is a quarter-dollar-sized discrete, somewhat depressed, smooth, nontender, slightly scaling, thickened erythematous plaque on the posterior aspect of the right calf. The center of the lesion reveals a yellow color with superficial fine telangiectasias. Some varicose veins are noted in both lower extremities.

Blood cholesterol was 304 mg. per 100 cc. Blood sugar was 165 mg. per 100 cc.

There has been a slow but definite regression in the size of the lesion since June 13, 1950. The patient has worn an Ace elastic dressing on the affected leg since that time and has been taking 300 mg. of vitamin E daily since July 21, 1950.

DISCUSSION

DR. GEORGE T. LENAHAN, San Francisco: Frequently, when patients with diabetes are presented at meetings, we see the term "properly controlled" in the history. These patients have a urine free of sugar and a normal blood sugar. However, these patients may complain of leg aches, fatigue, etc., that occur with mild acidosis or ketosis. I feel that these patients do not have the disorder adequately controlled. This patient has a slightly elevated blood cholesterol level, and I am sure that if she has her disease for a few more years she will have a much higher one. I feel it is unfair to the diabetic not to regulate his diet just because his urine is sugar free and the blood sugar level is normal. I know that Tolstoi of New York feels that these observations are the least important of the features of diabetes. His diet includes liberal carbohydrate and protein but strives to achieve a low of 60 Gm. of fat a day. Joslyn permits his patients to have glycosuria, but they do well clinically. There are fewer amputations, fewer skin lesions and, in spite of the high blood sugars, no manifestations of the lesions which we frequently associate, all too incorrectly, with high blood sugar. Furunculosis and pustular eruptions, to my mind at least, are not related to hyperglycemia but rather to the ketosis of improperly controlled diabetes. In cases of necrobiosis I believe that the patients should receive the benefit of a low fat diet.

DR. LOUIS H. WINER, Beverly Hills, Calif.: The fatty changes in four of the cases under discussion are of interest, and all are different.

The disseminated xanthomas are of reticulum origin in that the cells, which phagocytize the fat, are fixed tissue histiocytes. When they give up their fat, the phagocytes disappear, probably returning to fibrous connective tissue.

In the slide from the patient with nevoxanthoendothelioma, endothelial cells rather than connective tissue cells predominate and become the phagocytic cells. Histologically, the diagnostic criteria are the phagocytic endothelial cells, the endothelial giant cells and the numerous eosinophils. This type of xanthoma resolves spontaneously.

The third type of xanthoma was xanthoma diabeticorum, which belongs histologically, though not clinically, to the fibroxanthoma group. It disappears under treatment for diabetes. Histologically it has numerous polymorphonuclear leukocytes permeating the phagocytic or foam cells areas. Foam cells plus polymorphonuclear leukocytes are histologically suggestive of xanthoma diabeticorum. In necrobiosis lipoidica diabeticorum, or, as it is called by Dr. O'Leary, "diabetic atrophy with fatty degeneration," there is an irreversible transformation in which sheets of connective tissue are involved as the result of an occluded vessel. As a rule the vessel is only partially occluded. The cytoplasm of the connective tissue fibers is replaced by fatty globules. This process gives the cutis a "washed-out" appearance. Granuloma annulare is differentiated from this condition in that it is a localized rather than a diffuse process, is lobulated rather than in sheets and shows no vascular degeneration.

DR. BERNARD F. RYAN, Oakland (by invitation): From what I have read, the present tendency is to allow these patients to have a higher carbohydrate intake and not to be alarmed by some glycosuria as long as the patients are comfortable, not gaining weight and showing no evidence of acidosis. Not long ago, I had the opportunity to observe another patient with necrobiosis lipoidica diabeticorum on one leg. There was little or no improvement in the cutaneus lesions under the usual diabetic regulations. This man also had varicose veins on both lower extremities. After the application of elastic wrap-around type of supportive dressings to the legs, the lesions cleared entirely in about six months. Perhaps associated venous stasis is a significant contributing factor in preventing the lesion of necrobiosis from involuting.

Boeck's Sarcoid with Skin Lesions Localized to Tattoos. Presented by DR. ERVIN EPSTEIN, Oakland, and (by invitation) DR. GLEN LUBECK, Oakland.

DISCUSSION

DR. WALTER R. NICKEL, San Diego, Calif.: Two years ago, at the histopathology meeting at Los Angeles, one of us presented microscopic sections from a patient who had sarcoid-like lesions developing in a tattoo. As in the case today, the sarcoid developed in all types of the artificial pigment which had been introduced. However, it also extended into the normal skin.

DR. ERVIN EPSTEIN, Oakland: I have been very much interested in the skin lesions that occur in tattoo marks. Dr. Krause told me about a patient in San Francisco who had sarcoid confined to the green dye in a tattoo. In this case all the colors are involved. It is well known that the area with the red dye is usually not affected in secondary syphilis because of the mercury in it. But about two years ago in this hospital we had a case of secondary syphilis in which the red area was involved. However, in Hawaii, a red dye that does not contain mercury is used. We also observed a patient with discoid lupus erythematosus of the face who had a tattoo on his arm depicting a girl's face. Someone administered ultraviolet radiation to the patient's face. The discoid lupus disseminated and involved the tattoo mark on his arm. It affected only the red dye—the lips and the cheeks of the tattoo design. That selection was believed to be due to the fact that cinnabar is supposedly a photosensitizing agent. The patient presented here today has uveitis and other manifestations of sarcoid. The acid-fast stain was negative, but, as Dr. Fasal said, that observation does not rule out leprosy. However, from the evidence at hand, it is felt that this patient has sarcoid.

Severe Cystic Acne Vulgaris. Presented by DR. H. J. TEMPLETON, DR. C. J. LUNSFORD, DR. H. V. ALLINGTON and DR. R. RAYMOND ALLINGTON, Oakland.

M. H., a white man aged 20, was first seen by us in 1947, with severe, deep cystic lesions on his forehead. This involvement has persisted in spite of all kinds of treatment. The indolent cystic, burrowing lesions have continued to appear on the face and neck and, to a much lesser degree, on the chest and back. Recently similar lesions have involved the buttocks. In addition to treatment with diet and vitamin A concentrate the patient has received at various times calcium, iron and vitamin B complex and whole blood transfusions. He has received prolonged courses of vaccine, both stock and autogenous. His basal metabolic rate was found to be —16, and for a time he was given desiccated thyroid substance. Blood sugar was normal. He received X-ray treatment and sulfadiazine. Subsequently large and prolonged doses of penicillin were used, and recently aureomycin has been given orally. On occasions the lesions have been so severe as to result in general malaise, toxemia, low grade fever and mild anemia. The lesions have required repeated incision and drainage after which remained irregular, undermined, bridged scars and epithelized pockets in which infection continued. The patient has been hospitalized, on several occasions, and many of the lesions have been "unroofed" or exteriorized while he was under general anesthesia. Plastic surgical measures have been instituted but are hampered by the continued development of new lesions.

DISCUSSION

DR. PAUL A. O'LEARY, Rochester, Minn. (by invitation): My concept of this case is that it is not acne but rather an extreme example of hidradenitis suppurativa, which is essentially a disease of the apocrine glands. It does occur in the seborrheic person and in those who have acne vulgaris. Also it occurs in many who do not have any comedos. This disease frequently starts as a suppurative process, first involving the hand or a finger and then spreads to the axillas, draining the involved hand or finger. The other axilla and then the submamillary areas and buttocks and, in severe cases, eventually the back become involved. In other words, hidradenitis is essentially a systemic disease of an infectious origin in a person who has a seborrheic type of skin but in whom the disease is not primarily a form of acne. The treatment by excision and graft of the axilla originally involved is recommended to our patients if X-ray therapy and the use of antibiotics do not control the process. It is paradoxical that in patients with extensive involvement of the buttocks and groin as well as of the axillas excision of the glands may be done and at the same time a full thickness graft applied.

Pyoderma faciale is a disease characterized by an explosive onset of undermining, linear abscesses of the face. It is seen most frequently in young women, some of whom have had mild acne vulgaris preceding the onset of the pyoderma while a few have had no previous acne.

Within a period of a week or 10 days their condition may develop from very mild acne into deep undermining pyoderma in which comedones are conspicuous by their absence. The condition is frequently associated, as Dr. Obermayer said, with some glandular dysfunction. The girls are usually amenorrheic, have varying degrees of anemia, have frequently lost weight and in general are below par. In a few patients there has been evidence of thyroid dysfunction as well as ovarian dysfunction. The endocrine disturbances may be of one type or another but are not specific. Hence the disorder is not fundamentally an acne disease. It is essentially a disease of debility in which endocrine dysfunctions are present. It is manifested on the face by sterile abscesses without comedones, which run more or less a typical course. We have treated most of the patients with pyoderma faciale that we have seen, but some who were not treated had spontaneous control of the process within a period of two years or less.

Congenital Syhilis: Fourteen Cases, Showing Stigmas. Presented (by invitation) by Dr. Patrick Butler, Oakland.

DISCUSSION

Dr. Norman N. Epstein, San Francisco: As Dr. O'Leary has pointed out, syphilis seems to be a vanishing disease, and to see so many congenital syphilitics at one meeting was unusual. First, how is it possible that so large a group of children can have hereditary syphilis in this day and age and under present conditions of public health control? It is well known, of course, that there is an extremely high incidence of syphilis among Negroes. That, I believe, is partially our fault. The education of that group is important in our attempt to stamp out this disease. Certainly if the mothers could have been examined during their pregnancy there would be no reason for these children to have congenital syphilis. The treatment of congenital syphilis is no different from the treatment of acquired syphilis. Neurosyphilis as a rule is more serious in a child with hereditary syphilis than in adults with acquired syphilis. The presence of an active spinal fluid should be an indication for institution of every therapeutic procedure at our command to arrest the process. Penicillin is the treatment of choice, but when I think that it is often assumed that one course of penicillin will cure late syphilis or late latent syphilis, I think we are doing a little bit of wishful thinking. We certainly know that the older the disease the less likely we are to cure it with any of our methods of treatment. It is true in the early phases of this disease that the longer the infection has been present the less the percentage of cures. A patient with late secondary syphilis is less likely to be cured than one with seronegative primary syphilis. It would be my feeling that if the child has asymptomatic neurosyphilis penicillin alone should be tried. If the spinal fluid does not become inactive, then fever therapy should be added to the course of treatment.

Dr. Paul A. O'Leary, Rochester, Minn. (by invitation): When I was invited to meet with the San Francisco County Medical Society, I was asked to talk about the treatment of syphilis. I could develop no enthusiasm for such a presentation because the number of patients with the disease has greatly decreased in the past few years in my department and in the state of Minnesota, where last year there were only 69 acute cases of syphilis. To the 73,000 pregnant women who had serological tests done during 1949, only one child was born with congenital syphilis during that year. Since 1919 a very active and cooperative venereal disease division of the State Health Department has been under the direction of Dr. Harry Irvine. He established a similar program for the state of California in 1921. The relationship between the medical profession of Minnesota and the venereal disease division has been close and cooperative, so that there have been accurate records of the venereal disease situation in the state since 1919. The year 1925 was the peak year for the registration of syphilitics in the state, when some 4,400 were reported. Since 1925, there has been a constant, steady decrease in the number of cases reported, with the exception of 1932, which, as you remember, was in the depression, which fact might explain one part of the situation, and 1946, when the veterans returned. Even though Minnesota has had a low syphilis rate when compared with the Southern states, it is significant that since 1925 there has been a steady decrease in the incidence of syphilis in the state. Accordingly, it is well not to attribute the decrease in the incidence of syphilis, which is occurring in most parts of this country, to the influence of penicillin alone. We should acknowledge the effects of the antisyphilis propaganda, the publicity, the newspaper and the magazine articles

and the activities of the public health departments. All these factors, added to the efficiency, simplicity and availability of penicillin therapy, probably account for the greater part of the decrease of the disease. Fresh cases of syphilis are a rarity on my service today. I started to give arsphenamine back in 1914, and I have been appraising therapeutic measures for syphilis ever since. I believe the over-all results from treatment with penicillin are better than the results we have had with the good systems of treatment with arsenic and bismuth in the years past. Penicillin has the outstanding advantages of a high therapeutic index, a short course, few reactions and ease of administration. Even with the good results from the penicillin treatment of early syphilis there are some 10 to 15 per cent of the persons with early syphilis who, over the long pull, are not going to be cured by two or three courses of penicillin. They are the persons who apparently lack an active defense mechanism against the disease. I also agree with Dr. Epstein that in neurosyphilis we cannot and must not expect administration of penicillin to be the only method of treatment, because resort to the use of fever therapy and to other nonspecific measures in those patients who fail to derive adequate benefit from penicillin therapy is still advisable.

Bullous Dermatitis (Dermatitis Herpetiformis or Pemphigus) Controlled by ACTH Therapy. Presented by Dr. C. J. Lunsford, Oakland.

Subacute Disseminated Lupus Erythematosus. Presented by Dr. Bernard F. Ryan, Oakland.

BROOKLYN DERMATOLOGICAL SOCIETY

I. N. Holtzman, M.D., *President*

S. I. Greenberg, M.D., *Secretary*

Oct. 16, 1950

Benign Familial Pemphigus Improved by Aureomycin. Presented by Dr. B. D. Erger.

D. R., a man aged 30, had an eruption since 1941. It occurred on the neck, arms, axillas, penis, scrotum and perianal area at various times and, occasionally, at all the sites mentioned simultaneously. The patient averred that he had never been entirely free of the eruption since its onset.

When first seen in 1948 he presented exudative, superficial, crusting, eroded, circinate and gyrate plaques on the neck and in the axillas. The scrotum, penis and perineum were involved in a similar continuous process which was painful and disabling.

Histopathological examination revealed the following: There was splitting of the epithelial layers, leaving an irregular clear space within the epithelial layer and the germinal layer intact. Some cells surrounding the clear space had irregular, spindle-shaped pyknotic nuclei, and the cytoplasm of these cells was often scanty and denser than that of adjacent cells. There was a small amount of pink granular material within the space. There were small clear spaces in the germinal layer. The subcutis presented focal collections of fibroblasts, plasma cells and lymphocytes. The elastic tissue of the corium was not discernible with hematoxylin and eosin stain. The picture was compatible with benign familial pemphigus. (This report was made by a general pathologist.)

The patient made but small and temporary improvement with the administration of vitamin A and pencillin, X-ray therapy and numerous topical applications. Hot potassium permanganate compresses gave some relief at the perineal region. The patient has been kept comfortable and relatively free of the eruption with one capsule (250 mg.) of aureomycin per day.

Familial Benign Chronic Pemphigus Improved by Aureomycin Therapy. Presented by Dr. B. D. Erger.

DISCUSSION OF PRECEDING TWO CASES

Dr. B. D. Erger: The eruption in both of these cases was of seven or eight years' duration. Both men assert that they had received treatment, at frequent intervals, without much improvement. During the last three years we have tried almost everything that has been suggested in the journals. Carpenter (Treatment of Familial Benign Chronic Pemphigus: Rapid Improvement with Penicillin Therapy, Arch. Dermat. & Syph. **58**:80 [July] 1948) reported improve-

ment in several of his cases after penicillin therapy. One of the patients presented tonight was treated with penicillin for a carbuncle and during the time that the penicillin was being administered daily he acquired new lesions. X rays and vitamin A failed to provide more than transitory relief. Numerous topical applications were employed without any benefit resulting therefrom. However, the condition of each cleared up promptly, within a week, with three capsules daily of aureomycin, and the patients have been able to keep themselves fairly free of lesions with one capsule a day, ever since. One of the patients feels that he must take a capsule daily; the other resorts to aureomycin only at the appearance of a vesicle or when a new area of pruritus manifests itself. In the intervals he takes 200,000 units of vitamin A daily, in two doses. An interesting point is that this disease, which is presumed to be familial, a genetic one, responds to treatment with an antibiotic, which fact suggests that there might also be an infectious element involved.

DR. LOUIS CHARGIN: When was aureomycin therapy started with these men?

DR. B. D. ERGER: They have been taking aureomycin, 250 mg. capsules, for more than 18 months, during all the seasons of the year. I asked both to discontinue the medication for a week before they were to be presented here, but the patient with the neck lesions resumed the use of aureomycin in the past two days because of the unrelenting pruritus.

Psoriasis with Lack of Response to ACTH and Cortisone Therapy. Presented by DR. LAWRENCE FRANK.
A Case for Diagnosis: Keratosis Blennorrhagica? Presented by DR. L. COOMBS and DR. ARTHUR M. PERSKY.
Mycosis Fungoides? Presented by DR. R. L. REIN.
Alopecia Areata Limited to the Extremities. Presented by DR. LOUIS CHARGIN.
Alopecia Areata in Mother and Two Sons. Presented by DR. M. J. CANTOR.
A Case for Diagnosis: Parapsoriasis? Presented by DR. LOUIS CHARGIN.
A Case for Diagnosis: Scleroderma? Acrodermatitis Chronica Atrophicans? Presented by DR. M. J. CANTOR.
Seborrheic Dermatitis Related to Perspiration and Controlled by Methantheline ("Banthine"). Presented by DR. LAWRENCE FRANK.
Coexisting Urticaria Pigmentosa and von Recklinghausen's Disease. Presented by DR. B. D. ERGER.
Multiple Epithelioma. Presented by DR. C. B. LOCASTO.
Scar Burn. Presented (by invitation) by DR. O. S. GLATT.
Xanthoma Tuberosum (Receding). Presented by DR. M. J. CANTOR.

CLEVELAND DERMATOLOGICAL SOCIETY

Benjamin Levine, M.D., *President*
Herbert H. Johnson, M.D., *Secretary*
Harold N. Cole Jr., M.D., *Reporter*
Sept. 28, 1950

Pemphigus Vulgaris. Presented by DR. PAUL CHIVINGTON, DR. WILLIAM MURPHY and DR. BURTON PEPPERCORN for DR. JOHN E. RAUSCHKOLB.

L. C., a white man aged 67, previously presented before the Central States Dermatological Association on May 6, 1950, first acquired a bullous eruption in February 1949. Since that time there have been frequent remissions and exacerbations, with pronounced weight loss and gradually increased debility. During the course of the illness, large flaccid bullae and small tense ones have developed. There has been involvement of the mucous membranes of the mouth, pharynx and larynx. Pruritus has at times been severe.

At the present time there are numerous urticaria-like lesions and a few ruptured bullae on the skin.

On Aug. 27, 1950 cortisone, 300 mg., was given; 200 mg. was given the next day, and the dose was maintained at 100 mg. per day until Sept. 6, 1950, when it was decreased to 50 mg. per day. Very shortly after cortisone therapy was begun there was pronounced symptomatic improvement, with euphoria, gain in strength, increased appetite and decreased pruritus. The skin eruption subsided except for a few urticaria-like lesions and occasional small bullae. On September 14 a rapid gain in weight and edema of the ankles were noted. The edema responded to a salt-free diet and administration of mercurial diuretics. On September 22, because of an increase in the number of bullae, the cortisone dose was increased to 100 mg. per day. The total dose up to the present time has been 2.8 Gm.

The absolute eosinophil count dropped from 3,825 on August 22 to 900 on September 12 and then showed a tendency to rise, being 1,625 on September 14. Results of urinalysis have remained normal during treatment. The blood pressure has shown no rise. The white blood cell count on September 13 was 7,150. The Kline and Wassermann reactions were negative.

Prior to the administration of cortisone, treatment was supportive, with the use of antibiotics for control of secondary infection, acetarsone, fractional x-rays, sulfapyridine and nicotinic acid, and whole blood transfusions.

DISCUSSION

DR. G. M. STROUD: I should like to comment about the psychiatric reaction of patients who have received cortisone and ACTH. Rome and Braceland in the *Proceedings of the Staff Meetings of the Mayo Clinic* for Aug. 16, 1950 reported four different types of reaction. The present patient would be included with the first group, I believe. He says that he is getting better every day. In Rome and Braceland's first group was a patient who said she was "sitting on top of the world." The response of those in the second group was an exaggeration of that of the persons in first one. However, the response shown by the third group was more serious. It seemed that in it there was a very striking personality defect, manifested by severe anxiety, hyperkinesis, obsessive-compulsive rituals, etc. In the last group were the so-called overtly psychotic reactions. These facts led the aforementioned writers to assume that the profound and sudden change in the metabolic homeostasis is similarly disruptive of psychologic adaptation. Among the vectors of force they included the personality of the patient, the emotional investment in the body and the secondary gains of the illness. It can be inferred that there is a purpose to illness and that the ACTH and cortisone blocked the emotional stimulation, which was thus reverted back to the brain, with a resultant mental reaction. It is to be expected that in the future the psychiatrist can in some way modify this stimulation and with the help of these drugs produce a more lasting remission of the patient's symptoms.

DR. HAROLD N. COLE: What have been the results of treatment with these compounds? What is the experience of the men here? How lasting are the results?

DR. G. A. DE OREO: I treated a severe case of pemphigus with cortisone, 400 mg. per day for four days and 300 mg. for 12 days. By about the eighth day there was striking improvement, but while still on treatment with the large doses the patient had a severe relapse, and so I think he was really having a spontaneous remission and that the treatment produced no results.

DR. BURTON PEPPERCORN: As you see, this patient has improved a great deal. The absolute eosinophil count, approximately 3,000 to begin with, dropped to 900, and that occurrence apparently showed some response. We also have another case of pemphigus foliaceus which has improved after about one week of therapy.

DR. JOHN E. RAUSCHKOLB: When this patient first acquired pemphigus, three years ago, he weighed 250 pounds (113 Kg.). Less than a month ago his weight was 139 pounds (63 Kg.). We started out with the administration of 300 mg. of cortisone the first day, gave 200 mg. the second day and 100 mg. the third day and then went back to giving doses of 300 mg. for a short time. The patient has made a nice gain in weight and is now up to 156½ pounds (71 Kg.). He has fewer bullae. The lesions have become more or less urticaria-like. He has very little pruritus. He is now up and around. Prior to the treatment his ankles were edematous and he could not walk.

Our other patient, the woman with pemphigus foliaceus referred to by Dr. Peppercorn, was around here for about two years at the point of death. On less than one week of treatment she has made a very remarkable improvement clinically. Mentally she is still lethargic, but clinically she looks much better.

DR. JAMES R. DRIVER: We had a patient at Lakeside Hospital a few months ago with severe pemphigus. He was given cortisone and seemed to improve enough to be sent home. He was discharged, and the cortisone therapy was continued at home, on a so-called maintenance dose. About a week ago I called his physician, who said that the patient was moribund.

DR. J. R. HASERICK: We have treated three patients with cortisone. Two of them were not treated long enough, only three or four weeks, and so we do not know how they will do. The third one was in the hospital for six months and on two occasions responded to ACTH,

200 mg. a day. It took 10 days to get a response. The third time there was no response, and the patient is moribund. Our experience, as indicated, has not been very promising. We have one patient whom Dr. Netherton is treating with ACTH who has responded quite well, but he did not respond until Dr. Netherton put him on carbarsone therapy at the same time.

Chronic Disseminated Lupus Erythematosus. Presented by Dr. Paul Chivington, Dr. William Murphy and Dr. Burton Peppercorn for Dr. John E. Rauschkolb.

DISCUSSION

Dr. H. Hecht: I should like to call your attention to a paper by Klemperer, Gueft, Lee and others, on "Cytochemical Changes in Lupus Erythematosus," in the *Archives of Pathology* (**49**:503-517 [May] 1950). These workeres re-examined 35 cases of lupus erythematosus acutus and found in 32 of these the hematoxylin bodies first described by Gross as appearing in the endocardium and by Ginzler and Fox as seen in the lymph nodes and kidneys. They assumed that the origin of these bodies is in the nuclei of mesenchymal cells. There is a similarity between the Hargraves L. E. cells in the bone marrow—demonstrated here by Haserick—and the free hematoxylin bodies.

Dr. Frank M. McDonald: I would be interested in comments on the use of vitamin E. It is still felt that it has a fair degree of usefulness, and I wondered if that has been the experience of this group, perhaps particularly in a case of the disseminated type, where one does not want to use a heavy metal.

Dr. J. R. Haserick: We used it in one case. There was a remission after the patient had been acutely ill. During this time we carried her on vitamin E therapy; she relapsed severely and eventually did not respond to anything.

Dr. James R. Driver: I have been under the impression, just from my own experience with a couple of cases of subacute disseminated erythematosus, that the disease responds better to vitamin E than does the ordinary discoid type.

Dr. Harold N. Cole: I think the results of treatment with vitamin E in chronic discoid lupus erythematosus are very disappointing.

Acrokeratosis Verruciformis (Hopf). Presented by Dr. Paul Chivington, Dr. William Murphy and Dr. Burton Peppercorn for Dr. John E. Rauschkolb.

W. H., a 19 year old Negro girl, has had a papular eruption of the hands and feet as long as she can remember. The lesions are asymptomatic. They are pigmented, symmetrical in distribution and located along the sides of the hands, over the interphalangeal joints, over the Achilles tendons and the insteps. They vary in size from 1 to 5 mm. and are flat topped and hyperkeratotic. The lesions are of a firm consistency.

An aunt has similar lesions.

The blood Kline and Wassermann reactions were negative. A hemogram and a urinalysis revealed no abnormality.

Histologic examination of a biopsy specimen showed pronounced acanthosis and hyperkeratosis. Only a comparatively small portion of corium was present in the section, and this showed increased density of the connective tissue.

DISCUSSION

Dr. Harold N. Cole Jr.: I should like to suggest the diagnosis of porokeratosis, particularly because of the lesions on the inner aspect of the ankles, some of which have depressed centers and a hyperkeratotic periphery. Unfortunately, the microscopic section is not much help here because of the tangential way it was cut. Some of the lesions on the dorsa of the hands also have depressed centers and a hyperkeratotic periphery.

This patient is very reminiscent of one shown at the Central States meeting in May 1950—N. A., if any of you recall him. The lesions on the ankles are very similar. A disorder that was brought up in the differential diagnosis of that case was angiokeratoma. Looking at the section in this patient, one sees a single large blood space just beneath the epidermis. However, because of the tangential cut I do not believe one could attach much significance to that observation.

DR. E. S. HALLINGER (by invitation): I presented a case before the New York State Society (Barker, L. P.; Hueber, W., and Hallinger, E. S.: *New York J. Med.* **48**:1909 [Sept. 1, pt. 1] 1948), of a mother, whose child was also affected. The lesions in that case were of 14 years' duration and were of four different types: One was the plaquelike lesion, the most typical. The second was the follicular keratotic plug. The third was keratotic, papular and nodular, and the fourth was the verrucous or callous lesion. The lesions that this patient shows on the back of her heel and on the instep are almost identical with the lesions in our patient, that is, the small, punctate, keratotic type of lesions on the instep and the linear lesions on the heel. I cannot quite fit in the lesions on the hand with that diagnosis, but on the basis of the lesions on the feet I think that this is a case of porokeratosis.

DR. HAROLD N. COLE: I thought that this was a very interesting case. These lesions were exceptionally defined. They were on the knuckles and on the dorsa of the hands; then there were some on the feet. I did not have the impression that clinically this disorder had the picture of porokeratosis. I realize that sometimes patients have papular lesions, so that it is difficult to make the differentiation. There is a familial history in this case, and it is true that you do have family history in porokeratosis. I thought that this was a beautiful case of acrokeratosis.

Sarcoid. Presented by DR. PAUL CHIVINGTON, DR. WILLIAM MURPHY and DR. BURTON PEPPERCORN for DR. JOHN E. RAUSCHKOLB.

Sarcoid. Presented by DR. PAUL CHIVINGTON, DR. WILLIAM MURPHY and DR. BURTON PEPPERCORN for DR. JOHN E. RAUSCHKOLB.

Sarcoid with Uveoparotitis (Heerfordt's Syndrome). Presented by DR. PAUL CHIVINGTON, DR. WILLIAM MURPHY and DR. BURTON PEPPERCORN for DR. JOHN E. RAUSCHKOLB.

Urticaria Pigmentosa. Presented by DR. ALLEN E. WALKER.

Urticaria Pigmentosa. Presented by DR. FRANK M. MCDONALD.

Mycosis Fungoides. (Previously Presented on Oct. 27, 1949.) Presented by DR. PAUL CHIVINGTON, DR. WILLIAM MURPHY and DR. BURTON PEPPERCORN for DR. JOHN E. RAUSCHKOLB.

Syringomyelia (Morvan's Disease). Presented by DR. PAUL CHIVINGTON, DR. WILLIAM MURPHY and DR. BURTON PEPPERCORN for DR. JOHN E. RAUSCHKOLB.

Malignant Melanoma. Presented by DR. PAUL CHIVINGTON, DR. WILLIAM MURPHY and DR. BURTON PEPPERCORN for DR. JOHN E. RAUSCHKOLB.

A Case for Diagnosis. Presented by DR. HAROLD N. COLE, DR. JAMES R. DRIVER and DR. HAROLD N. COLE JR.

Papular Myxedema of the Skin. Presented by DR. PAUL CHIVINGTON, DR. WILLIAM MURPHY and DR. BURTON PEPPERCORN for DR. JOHN E. RAUSCHKOLB.

Diabetes Mellitus; Juvenile Xanthoma Diabeticorum. Presented by DR. HAROLD N. COLE and DR. JAMES R. DRIVER for DR. ALLEN E. WALKER.

A Case for Diagnosis: Acute Lichen Planus? Presented by DR. PAUL CHIVINGTON, DR. WILLIAM MURPHY and DR. BURTON PEPPERCORN for DR. JOHN E. RAUSCHKOLB.

Nevoxanthoendothelioma on the Toe. Presented by DR. PAUL CHIVINGTON, DR. WILLIAM MURPHY and DR. BURTON PEPPERCORN for DR. JOHN E. RAUSCHKOLB.

Acrodermatitis Chronica Atrophicans. Presented by DR. PAUL CHIVINGTON, DR. WILLIAM MURPHY and DR. BURTON PEPPERCORN for DR. JOHN E. RAUSCHKOLB.

Bowen's Disease. Presented by DR. ALLEN E. WALKER.

Benjamin Levine, M.D., *President*

Herbert H. Johnson, M.D., *Secretary*

Harold N. Cole Jr., M.D., *Reporter*

Oct. 26, 1950

Erythema Gyratum Perstans. Presented by DR. HAROLD N. COLE, DR. JAMES R. DRIVER, and DR. HAROLD N. COLE JR.

L. L., a 55-yr.-old white man, presents a generalized eruption which has occurred in each of the past three summers.

Physical examination shows numerous large ringed, gyrate, and annular lesions on the arms, trunk, and legs.

Histologic examination of a biopsy specimen showed little change in the epidermis. In the upper part of the cutis there was a distinct and marked perivascular infiltration of lymphocytes and histiocytes. There was proliferation of endothelial cells also. There were scattered cells in the upper portion of the cutis containing brown pigment thought to be melanin. The upper part of the corium was moderately edematous. There was a slight infiltration of histiocytes

beneath the epidermis, and a few cells extended into the epidermis. The connective tissue of the cutis was swollen, moderately pale-staining, and edematous. In a few places the fibers of the corium were separated and fragmented. Occasional eosinophils were present.

A Case for Diagnosis: Melanosis Cutis? Kaposi's Idiopathic Hemorrhagic Sarcoma? Presented by DR. HAROLD N. COLE and DR. JAMES R. DRIVER.

Mrs. E. R., a 24-yr.-old white woman, presents a lesion over the outer aspect of the left ankle, which has been present since she was 1 yr. of age.

There was no history of trauma precedent to the appearance of the lesion, and the past medical history was otherwise noncontributory.

According to the patient, the eruption first started with perfectly flat, reddish spots, which appeared rather suddenly and then remained essentially unchanged until the fall of 1948, when they appeared to become raised. Histologic diagnosis of a biopsy specimen taken at the University of Iowa in March 1949 was "Angioma of the skin, although Kaposi's idiopathic hemorrhagic sarcoma cannot be excluded."

Physical examination revealed a 0.7 by 0.7 cm., crusted, purplish lesion, superior and lateral to the external malleolus of the left ankle. Adjacent to the lesion was an area of skin 8.5 by 8.0 cm. in diameter, which was faintly erythematous and showed some degree of atrophy and hyperpigmentation.

Microscopic examination of a recent biopsy specimen showed the following: "Throughout the cutis there were large cells containing granular brown pigment, which was taken to be hemosiderin. In the superficial cutis and extending into the mid-cutis there was marked capillary proliferation. The capillaries were thick-walled and there was multiplication of endothelial cells around them. A few basophilic inclusions were seen in some of the endothelial cells. There was degeneration of the collagen superficially; it was edematous, and the fibrils were widely separated.

"Special stain showed that the pigment was not hemosiderin, as it was iron-free.

"This could only be placed in the category of melanosis of the skin. The vascular changes could not be explained as a component of the melanosis."

DISCUSSION

DR. H. Z. LUND: I was impressed by the collection of capillaries just beneath the epidermis in the upper part of the cutis and the distribution of the pigment, not particularly in the region of the capillaries but more deeply and in regions far away from the capillaries, in the regions of the sweat glands. In almost every cell in the collagenous portion of the cutis there was pigment. I interpreted it as hemosiderin, but commented that a stain for iron was negative.

DR. H. N. COLE JR.: The first time that I saw this woman I got the impression clinically that the condition was nevus flammeus. She insists that it appeared when she was about 9 mo. of age and has been present since that time. In 1948 a biopsy was performed at the University of Iowa. A diagnosis of hemangioma of the skin was made, but with the comment that Kaposi's idiopathic hemorrhagic sarcoma could not be excluded because of the capillary proliferation and the endothelial cell proliferation. The thing that confounded me was that with such a picture I did not see how there could be an absence of hemosiderin in the tissues surrounding the capillaries. If the pigment observed is melanin, I could venture only the improbable diagnosis that there are two different types of birthmarks present here, nevus flammeus and some type of melanosis cutis.

Fox-Fordyce Disease. Presented by DR. HAROLD H. BREMERS, DR. ROBERT K. GARDNER, and DR. ULLIN W. LEAVELL for DR. HAROLD N. COLE and DR. JAMES R. DRIVER.

Cicatricial Keloids. Presented by DR. HAROLD H. BREMERS, DR. ROBERT K. GARDNER, and DR. ULLIN W. LEAVELL for DR. HAROLD N. COLE and DR. JAMES R. DRIVER.

Syphilis, Late Congenital, with (1) Asymptomatic Neurosyphilis; (2) Osteomyelitis, Chronic, of Right Frontal Bone, Right Parietal Bone, and Both Tibiae: (3) Syphilitic Arthritis of Both Elbow Joints; (4) Syphilitic Chorioretinitis, Old, Right; (5) Syphilitic Iris Atrophy, Left. Presented by DR. HAROLD H. BREMERS, DR. ROBERT K. GARDNER, and DR. ULLIN W. LEAVELL for DR. HAROLD N. COLE and DR. JAMES R. DRIVER.

Xanthoma Tuberosum Multiplex. Presented by DR. HAROLD N. COLE, DR. JAMES R. DRIVER and DR. HAROLD N. COLE JR.

Parapsoriasis (Guttate Type). Presented by DR. H. G. MISKJIAN.

Nevus Sebaceus. Presented by DR. EUGENE J. ARDAY.

Lichen Planus with Unusual Mucous Membrane Involvement. Presented by DR. H. G. MISKJIAN.

Diffuse Generalized Scleroderma. Presented by Dr. Harold H. Bremers, Dr. Robert K. Gardner, and Dr. Ullin W. Leavell for Dr. Harold N. Cole and Dr. James R. Driver.

Lichen Planus. Presented by Dr. Harold H. Bremers, Dr. Robert K. Gardner, and Dr. Ullin W. Leavell for Dr. Harold N. Cole and Dr. James R. Driver.

Poikiloderma Atrophicans Vasculare (Jacobi) Beginning at Age 4 and Persisting for Twenty-Seven Years Unchanged Except for Progressive Spread. Presented by Dr. Harold N. Cole, Dr. James R. Driver, and Dr. Harold N. Cole Jr.

A Case for Diagnosis: Chronic Discoid Lupus Erythematosus? Fixed Drug Eruption? Presented by Dr. E. W. Netherton.

A Case for Diagnosis: Drug Eruption? Presented by Dr. Harold H. Bremers, Dr. Robert K. Gardner, and Dr. Ullin W. Leavell for Dr. Harold N. Cole and Dr. James R. Driver.

Acute Disseminated Lupus Erythematosus. Presented by Dr. Harold H. Bremers, Dr. Robert K. Gardner, and Dr. Ullin W. Leavell for Dr. Harold N. Cole and Dr. James R. Driver.

A Case for Diagnosis: Metastatic Carcinoma to the Skin from Site Unknown? Periarteritis Nodosa? Presented by Dr. Harold H. Bremers, Dr. Robert K. Gardner, and Dr. Ullin W. Leavell for the Medical Service of University Hospitals.

Atypical Lipochondrodystrophy. Presented by Dr. Harold H. Bremers, Dr. Robert K. Gardner, and Dr. Ullin W. Leavell for Dr. R. Mercer, Department of Pediatrics.

PHILADELPHIA DERMATOLOGICAL SOCIETY

Edward F. Corson M.D., *Chairman*

H. E. Twining, M.D., *Secretary*

Sept. 15, 1950

Coexisting Alopecia Areata and Tinea Capitis. Presented by Dr. Reuben Friedman and (by invitation) Dr. Robert Griffith.

Pemphigus Erythematosus. Presented by Dr. Carroll S. Wright and (by invitation) Dr. J. B. Roxby Jr.

Parapsoriasis (Psoriasis?). Presented by Dr. Carroll S. Wright and (by invitation) Dr. Joseph Squillace and Dr. Robert Griffith.

Linear Scleroderma with Congenital Anomalies of the Spine. Presented by Dr. Carroll S. Wright and (by invitation) Dr. Kenneth Smith.

Xanthoma Diabeticorum (Necrobiosis Lipoidica Diabeticorum?). Presented by Dr. Reuben Friedman and (by invitation) Dr. Jack Weiner.

Prurigo Nodularis. Presented by Dr. Carroll S. Wright and (by invitation) Dr. Jack Weiner.

Cheilitis and Stomatitis of Undetermined Origin: Irritant Dermatitis of the Face (Due to Saliva?). Presented by Dr. Carroll S. Wright, Dr. Reuben Friedman and (by invitation) Dr. Jack Weiner.

Diffuse Scleroderma with Improvement by Treatment. Presented by Dr. Carroll S. Wright and (by invitation) Dr. N. Richardson and Dr. Jack Weiner.

Erythroplasia of Queyrat(?) Presented by Dr. Carroll S. Wright and (by invitation) Dr. J. B. Roxby Jr., and Dr. Robert Griffith.

Urticaria Pigmentosa. Presented by Dr. Henry H. Perlman and (by invitation) Dr. Louis Jaffe.

Acne Conglobata of the Scalp (Perifolliculitis Capitis Abscedens et Suffodiens?). Presented by Dr. Reuben Friedman and (by invitation) Dr. Louis Jaffe.

Neurofibromatosis (von Recklinghausen's). Presented by Dr. Carroll S. Wright.

Neurodermatitis, Generalized Psoriasiform Exfoliative. Presented by Dr. Reuben Friedman and by (by invition) Dr. Joseph Squillace and Dr. Jack Weiner.

BRONX DERMATOLOGICAL SOCIETY

William Leifer, M.D., *Vice President, in the Chair*

Henry Silver, M.D., *Secretary*

Oct. 19, 1950

Dermatitis Herpetiformis (Atypical) Treated with ACTH (Wilson). Presented by Dr. Alexander A. Fisher and (by invitation) Dr. Gordon Sauer and Dr. Daniel Hackbarth.

I. H., a white woman aged 52, has had a generalized eruption since 1938. It was variously diagnosed as neurodermatitis, exudative lichenoid and discoid dermatosis, and, finally, neurodermatitis. She has received therapy with arsenic, aureomycin, x-rays and sulfapyridine, with no essential effect. Raynaud's disease developed in 1947 but is under control now. The patient has had hypertension for many years.

The sedimentation rate was 33 mm. per hour. Chemical examination of the blood revealed normal values for sugar, sodium, potassium, and nonprotein nitrogen. The stools were negative for cysts, ova, and parasites. The Fishberg concentration test and roentgenograms of long bones revealed no abnormal findings. Examination of the sternal marrow showed eosinophilic hyperplasia. Histologic examination of a muscle showed no abnormalities.

Histologic examination of a skin specimen taken from the leg showed an intraepidermic vesicle with psoriasiform acanthosis and a banal infiltrate. The vesicle contained fibrin and polymorphonuclear and small round cells. Examination of a skin section taken from the ankle showed a resemblance to lichen obtusus. The methylrosaniline chloride (methyl violet) stain for amyloid was negative.

The hemogram, before ACTH therapy was instituted, showed 16,100 white blood cells and an eosinophil count varying from 25 to 52%. The Thorn test, done after the administration of 20 mg. of ACTH, showed a fall to 13% in four hours.

General medical examination revealed no abnormality except mild hypertension (180/100) and scarring of some finger tips.

Before ACTH (Wilson) therapy was instituted, the eruption was generalized, erythematous, papular, scaly, and lichenified. Many vesicles were seen. On the dorsa of the feet and legs were fine filiform keratoses. There was generalized macular pigmentation of the skin.

Before the administration of ACTH was begun, diphenhydramine (benadryl®) hydrochloride, pentobarbital (nembutal®), and various bland local remedies were administered for five days, with no change in the clinical condition or intense pruritus.

ACTH therapy was instituted on Sept. 29, 1950, in the dose of 20 mg. every eight hours (60 mg. per day). The vesicles disappeared in four days, but the nocturnal itching was still intense when the use of diphenhydramine hydrochloride was stopped. Therefore, on Oct. 6, 1950, the ACTH dose was raised to 100 mg. per day in three divided doses. No diphenhydramine was given, and itching decreased, disappearing around Oct. 12, 1950. The infiltrated erythematous papules had receded completely; only the pigmentation remained. The patient states that she was able to sleep comfortably for the first time in 12 yr. She was discharged from the hospital on Oct 15 on a maintenance dose of 100 mg. of ACTH in one daily injection.

The following side reactions to ACTH were observed: 1. At the onset of therapy, there were diarrhea and abdominal pains, which stopped in a few days. The incision wound for removal of a lymph node biopsy specimen done one day before ACTH therapy began became infected and has not healed. 2. A skin biopsy site healed during therapy. The hypertension was not significantly altered.

DISCUSSION

Dr. Gordon Sauer (by invitation): The case is presented for three reasons: This is among the earliest of dermatologic cases in which the ACTH produced by the Wilson Company was used. They have stated that their ACTH product is more potent than others on the market. In this case it was found that a dose of 100 mg. per day was required for clinical improvement. Second, the eosinophil count was unusually high. After administration of 20 mg. of the Wilson ACTH, as in the Thorn test, the eosinophils fell to 13% in four hours. Then, the patient showed normal healing of the biopsy site during the ACTH therapy, but a surgical incision for a lymph node and muscle biopsy failed to heal during the same time.

Dr. Louis Chargin: From the clinical picture presented tonight, I am not willing to accept the diagnosis of dermatitis herpetiformis. The diagnosis apparently rests between lymphoblastoma or generalized neurodermatitis, possibly lichenoid discoid dermatitis.

Dr. Julius H. Pollock: I saw this patient about nine months ago. At that time it was impossible to consider dermatitis herpetiformis; rather, lichenoid discoid dermatitis seemed the correct diagnosis. There were no vesicular or bullous lesions present, and the picture was that of lichenification with pigmentation. Certainly, from the clinical aspect this evening, I should judge that there is considerable improvement.

Dr. Abraham J. Orfuss: On what basis did the presenters come to the conclusion that the Wilson product was equal to or better than the others on the market?

Dr. Marion B. Sulzberger: There are many features of this case which I should like to discuss, but time permits me to select only one. This is the influence of ACTH and cortisone on the healing of different types of wounds. There appears to be ample evidence that within their therapeutically effective dose ranges both ACTH and cortisone interfere with the healing of certain wounds. Moreover we, as well as others, have observed that it is the deeper defects, e. g., those of the subcutaneous tissues, which are impeded in their healing, while superficial defects (for example, the blisters of superficial burns or of bullous dermatoses such as pemphigus)

heal well. The latter point is aptly borne out by our observation of a considerable series of skin biopsy wounds in patients receiving therapeutic doses of ACTH and/or cortisone. These all healed rapidly and well even in patients whose deeper wounds (e. g., a gluteal abscess following an intramuscular injection) failed to do so until the hormone administration was stopped. There seems to be a significant and important contrast between the effects of these hormones on connective tissue and granulations, which are reduced in growth and vigor, and on epithelial structures, which are not. Perhaps this reduction of the activity of granulation and connective tissues may account for the reported success of homotransplantation in connection with ACTH therapy. It is said that full-thickness skin grafts from one person to another tend to "take" provided the recipient is being given adequate doses of ACTH. This unique and important phenomenon may perhaps be accounted for by the inhibition of certain activities of the connective and vascular tissues, not only in regard to their healing and growth but also in regard to their resistance to the "taking" or healing of the foreign (epithelial) elements of skin grafts derived from another person. Whatever may be the explanation, if homotransplants of skin can regularly be made to "take" it would be a new great step forward. This possibility is not only of incalculable potential practical value in skin grafting but also of almost limitless promise for certain fundamental dermatologic investigations. Obviously such long-debated issues as the possible epithelial site of eczematous contact-type allergy or the depth of the primary aberration which determines the skin sites affected by psoriasis or fixed drug eruptions or many pigmentary changes and numerous other problems of physiology and pathogenesis may be clarified or solved by the transplantation of different thicknesses of affected skin from the patient to a person free of the particular disease, the particular allergic skin changes, or other alteration under investigation (and vice versa).

DR. ALEXANDER A. FISHER: We do not maintain that this patient is cured. As a matter of fact, after she left the hospital, with the use of a placebo, the eruption promptly recurred. When the dose of ACTH was increased to 80 mg. per day good results were again obtained. As to differential diagnosis, I do not think that Duhring's disease could be clinically diagnosed tonight. It is of interest to note that for a full year while under observation the patient had no vesicles and then suddenly she blossomed forth with many such lesions. Dr. Jessner during the year predicted that sooner or later vesicles would appear. We make no special claims for the Wilson product over others. We think it is about as good.

A Case for Diagnosis: Lichen Planopilaris? Presented by DR. DAVID BALLIN.

S. K., a white man aged 70, presents an eruption that has persisted for the past three years.

On the scalp there are patches of closely set follicular, spiny keratotic plugs. On the trunk there are discrete, pink to red flat papules which have become confluent on the sides of the thorax, forming erythematous patches. Within these areas of erythema are numerous flat, sclerotic papules 0.5 to 0.0 cm. in diameter, round or rectilinear, with smooth, shiny surfaces which are slightly concave in some instances. These lesions are raised 1 to 2 mm. above the level of the skin. There are also present follicular keratotic plugs scattered singly or in groups. The smaller discrete papules are not typical lichen planus, and similar lesions are seen on the back. The inner aspects of the thighs and legs show similar papules and areas of confluence forming patches which are more deeply colored. On the flexor surfaces of both forearms are brownish-red sclerodermatous areas measuring about 10 by 5 cm. with outlying flat, slightly convex, sharply defined lesions 1 cm. in size, which have fused to form the patches.

Histologic examination of two sections of the skin produced the report that "no diagnosis is possible." In section A, the epidermis was atrophic, being only a few cells thick. There was some washing out of the basal cells. Rete pegs were not present. Mild hyperkeratosis was present. A banal infiltrate hugged the epidermis in several areas. The connective tissue of the upper part of the cutis was pale and showed evidence of considerable edema. There was a moderate perivascular infiltrate about the vessels of the cutis throughout the entire section.

In section B the epidermis was acanthotic and neurodermatitic. There was some edema of the collagen of the upper part of the cutis and some fragmentation of the connective tissue. A marked perivascular infiltrate, mainly banal, but with an occasional plasma cell, was seen about the vessels of the upper part of the cutis and the midcutis. Large masses of banal cells were seen in the subcutis and fat and about the sweat apparatus.

DISCUSSION

DR. LOUIS CHARGIN: The picture on the scalp is that of lichen spinulosus; the lesions on the trunk suggest lichen planus but also psoriasis and lichen sclerosus. How can we possibly fit all the features present into a single disease? One can say that the process on the scalp is usually not present with the other diseases mentioned but that one may observe it in lichen planopilaris. Therefore, it is purely on the basis of deductive reasoning that we arrive at a diagnosis of lichen planopilaris.

DR. FRANK E. CROSS: This case is unique. I believe it presents a disease entity, and I am inclined to think of it not as lichen planopilaris but as a form of scleroderma.

DR. JULIUS H. POLLOCK: Among the cases which the late Dr. Feldman utilized in his report on this condition, I recall one outstanding case, similar to the one presented tonight, in which there were present atrophic, white, slightly scaly papules.

Dr. Feldman pointed out that on the basis of his observations this white-spot atrophy was still part of lichen planus et acuminatus atrophicans and had nothing to do with lichen sclerosus of Hallopeau, scleroderma, or white-spot disease. He further maintained that the atrophic feature was so predominant because it was peculiar to this patient's skin, just as the atrophy would have appeared had this patient previously had syphilis or any other disease apt to leave atrophy.

As to the diagnosis of lichen sclerosus of Hallopeau in this case, I should like to point out that that condition never has the extent, the localization, and the plugging with horny material of the follicles and the involvement of the scalp that this case shows. Scleroderma can be ruled out because of the follicular lesions present.

I believe that the lesions on the forearms are lichen planus. In addition, the atrophy present and the follicular lesions bespeak the diagnosis of lichen planus et acuminatus atrophicans. Just as the features of the clinical triad in this disease may be absent, so a predominance or accentuation of one feature may obscure the diagnosis.

DR. WILBERT SACHS: I think we have gone far afield in this case. In cases of lichen planopilaris under my observation I have never seen lesions such as this case presents. I think the patient has two conditions. The condition is not atrophy in lichen planopilaris. One sees a sort of follicular atrophy of the lesions due to mechanical factors; Dr. Feldman thought it was atrophy because the elastic tissue was missing. The lesions on the body do not fit in with lichen planopilaris, but the lesions on the scalp do.

DR. HENRY SILVER: In the past two years we have seen a number of cases of lichen planus et acuminatus atrophicans presented before this society, and one must admit that no two cases looked alike. We have frequently argued about the criteria essential for the diagnosis of this disease. A short time ago Dr. Pollock presented a case in which the elements of lichen planus were missing, and Dr. Umansky refused to accept the diagnosis for this reason. He insisted on the triad of symptoms, i. e., lichen planus lesions, acuminate lesions, and the ever-present alopecia of the scalp. Yet, in spite of the absence of the lichen planus lesions, it was agreed that Dr. Pollock's case was a good example of lichen acuminatus atrophicans. In other words, cases which lack some cardinal elements still are accepted as lichen acuminatus atrophicans. The case presented is indeed puzzling. I have never seen such features of atrophy and sclerosis in lichen acuminatus atrophicans. I do recall, however, the first case report published by Dr. Feldman, in which he described features of morphea and lichen sclerosus (ARCH. DERMAT. & SYPH. **5**:102-113, 1922). Tonight we are confronted with just such a case. In the light of our previous discussions, I wish to point out that there are enough characteristic features in the present case—namely, the acuminate lesions and the alopecia—to permit us to diagnose lichen acuminatus atrophicans. But what about the other lesions? I am not too sure that the violaceous plaques on the arms and legs are lichen planus. I definitely could not fit in the atrophy and the sclerotic lesions on the chest and other parts of the body. These are lesions that we are accustomed to associate with lichen sclerosus. Therefore, in order to retain the clear concept of lichen acuminatus atrophicans, I would assume that this case is possibly a combination of lichen planus et acuminatus atrophicans and lichen sclerosus.

DR. MAX JESSNER: I cannot agree with what has been said about lichen planus atrophicus. There is no doubt that this disease exists. There is a good picture in the "Handbuch," a reproduction of a moulage from Breslau of a typical case of lichen planus atrophicus (Juliusberg,

F.: Lichen Planus Atrophicus, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, vol. 7, pt. 2, Berlin, Julius Springer, 1931, p. 42). Dr. Feldman's idea that in some persons certain lesions change into certain peculiar pictures is interesting. We had one such case of a patient with psoriasis in whom a number of lesions changed under our observation into a clinically and histologically typical picture of lichen sclerosus et atrophicus. Let me remind you of the times when we first discovered lichen-planus-like drug eruptions and Buschke expressed the idea that certain persons reacted with lichen-like eruptions to many causes. Perhaps Dr. Feldman had something like that in mind.

DR. MAURICE UMANSKY: The clinical appearance of the lesions on the chest and back bears a strong resemblance to lichen sclerosus. Some of the lesions show an inflammatory element, and they are, most likely, of more recent origin. The widespread eruption does not speak against the diagnosis of lichen sclerosus. The diagnosis of lichen planus et acuminatus atrophicans cannot be entertained because of the absence of the essential elements of this condition (lichen planus, etc.) and because of the presence of another eruption which is lichen sclerosus. The reported histologic finding, edema in the superficial layers of the cutis, further fits well with lichen sclerosus.

DR. FRANCES PASCHER: In the recurrent discussion of these cases, a difference of opinion persists. It is interesting that despite four biopsies the dermatopathologists could not come to a definite conclusion. They did agree that the typical changes seen in lichen planus, scleroderma, and lichen sclerosus et atrophicus were not found in these sections. Purely morphologic studies appear inadequate. Some new method of studying these cases, e. g., histochemical stains and reactions, may be more rewarding to the investigator.

DR. CHARLES WOLF: Dr. Pascher's remarks are pertinent. This patient is suffering from a retention of fats; if chemical studies were undertaken, some interesting data might be disclosed.

DR. DAVID B. BALLIN: This case was presented with the tentative diagnosis of lichen planopilaris. We shall endeavor to do the studies suggested tonight. Investigation of the fat and elastic tissue may furnish information.

Trichophyton Sulfureum Infection of the Scalp with Multiple Small-Kerion Formation. Presented by DR. ANDREW G. FRANKS and (by invitation) DR. ERNST M. ROSENBAUM.

W. S., a boy aged 12 yr., was first seen by us on Sept. 19, 1950,. at the Skin and Cancer Clinic of the New York University-Bellevue Medical Center. The disorder began approximately one year ago with one bald spot on the scalp. At first consultation the patient showed scattered patchy areas of alopecia over the scalp with follicular pustules and apparent atrophy in the patches. There was considerable scaling present.

Examination under Wood's light was negative for fluorescence. Microscopic examination of hair and scales was negative for fungi. Cultures of scales on Sabouraud agar showed Trichophyton sulfureum.

The trichophytin test with a dilution of 1:100 gave a 1+ reaction and, with a dilution of 1:30, a 2+ reaction, in 48 hr.

DISCUSSION

DR. EMANUEL MUSKATBLIT: I believe this case is interesting, not only because the fungus is rare in the United States but also for other practical reasons. First, the clinical appearance of the scalp is unusual; it does not resemble the common form of ringworm. Such cases with unusual appearance often escape the correct diagnosis. Second is the negative result of the microscopic examination of the hairs for fungi. This is due to intense inflammation, which eliminated most of the hairs from the follicles, leaving the few remaining infected hairs difficult to find. Third, no fluorescence was shown under the Wood light. We are so accustomed to rely on the fluorescence test that the negative result is often considered a proof that there is no ringworm. It is important, however, to remember that cases due to T. sulfureum, T. violaceum, and T. gypseum do not give a characteristic fluorescence under the Wood light and that diagnosis should be based on microscopic and cultural studies. X-ray epilation is not necessary in such kerionic cases because, owing to inflammatory reaction, the disease is self-eliminating. Still

another unusual feature is the probability that many small areas of permanent alopecia and atrophy will remain as an unpleasant cosmetic result of the deep inflammation, whether the case is treated with x-rays or not.

DR. RUDOLF L. BAER: The question arises whether one should or should not employ active measures to clear this condition as quickly as possible, in the hope of preventing an undesirable cosmetic effect. Perhaps x-ray epilation and systemic and local administration of aureomycin or penicillin would be indicated.

DR. MARION B. SULZBERGER: If one really fears alopecia as a result of the disease, it is a risk to give roentgen treatments, because of the possibility of later claims, unfounded though they may be.

DR. ERNST M. ROSENBAUM (by invitation): We decided to use one of the stronger remedies suggested by Dr. Satenstein, i. e., iodine crystals in solution. We were afraid that x-rays would serve only to increase the alopecia and would not cure the condition.

DR. ANDREW G. FRANKS: Dr. Muskatblit has gone over the essentials of this case. As to treatment, I think the disorder will clear in about eight weeks under local treatment. One other point should be stressed, namely, that this organism may cause an inflammatory or non-inflammatory type of reaction. In the latter x-ray epilation is employed.

Subtropical Lichen Planus Acquired in Florida. Presented by DR. DAVID B. BALLIN.

A Case for Diagnosis: Localized Rhinophyma? Sebaceous Nevus Tardus? Presented by DR. MARTIN V. BOARDMAN.

Exfoliative Erythroderma. Presented by DR. WILLIAM M. SISKIND.

Thrombopenic Purpura. Presented by DR. FRANCES PASCHER.

Subacute Lupus Erythematosus. Presented by DR. HANS H. BIBERSTEIN.

Tuberculosis Cutis with Prickle-Cell Epithelioma. Presented by DR. NATHAN SOBEL.

Generalized Psoriasis, Arrested Stage. Presented by DR. CHARLES WOLF.

Nevus Syringadenomatosus Papilliferus (Werther). Presented by DR. JOHN GARB.

A Case for Diagnosis: Granuloma Annulare Associated with Lichen Planus of the Body? Lichen Planus of the Sole? Presented by DR. CHARLES WOLF.

A Case for Diagnosis: Psoriasis? Parapsoriasis? Erythema Annulare Perstans? Presented by DR. ALEXANDER A. FISHER.

A Case for Diagnosis: Scleroderma with Poikiloderma-Like Changes? Presented by DR. ALEXANDER A. FISHER.

Charles R. Rein, M.D., *President*

Henry Silver, M.D., *Secretary*

Nov. 16, 1950

Nonsuppurative Panniculitis and Atropic Dermatitis. Presented by DR. ABRAHAM J. ORFUSS.

R. S., a woman aged 29, a patient at the Skin and Cancer Clinic of the New York University-Bellevue Medical Center, has had painful nodules of the legs for the past 12 years. These nodules arose without warning and were symmetrically distributed on the lower extremities, lasted a variable length of time, and disappeared, leaving no trace of their existence. Occurrence was commoner in the winter than at other times. There was no accompanying swelling. The lesions were red but did not go through color changes suggestive of vascular extravasation or ecchymosis. Tenderness, while nodules were present, was considerable. There was no breaking-down or ulceration of the lesions.

The patient had had eczema as an infant, with subsidence until the age of 13, when itching about the neck, elbows and knees recurred; the condition has persisted ever since, being most annoying in the winter time and about the menstrual time. The patient presents symptoms suggestive of hay fever; her father had asthma.

At present there is dryness, papulation, lichenification, and excoriations of the scalp, sides of the neck, and antecubital and popliteal areas. The thighs and legs show symmetrically distributed bilateral dusky macules at sites of former nodular lesions. No scarring, atrophy, or depression of the skin is noted.

Examination of the blood gave normal results, as did urinalysis. Roentgenograms of the chest showed nothing abnormal. Otologic consultation revealed otosclerosis, for which a fenestration operation was performed.

Histologic examination showed swollen vessels in the fat tissue, some of them almost occluded. There was an infiltration of small round cells and wandering connective tissue cells in the fat, in places that showed necrosis and a few giant cells. There was a moderate perivascular simple-cell-type reaction and slight swelling of the blood vessels in the corium. The histologic diagnosis was panniculitis (nonsuppurative).

Treatment in the past has consisted in hospitalization and fever therapy for atopic eczema, baths, and the use of lotions, ointments, injections of hapamine® (a chemical combination of histamine and despeciated horse serum globulin, containing no free histamine), soybean oil, antihistaminics, sedation, diethylstilbestrol and autoblood injections.

DISCUSSION

DR. ARTHUR B. HYMAN: The patient presents lesions on the legs only, and I do not see on what basis the diagnosis of nonsuppurative panniculitis, rather than erythema nodosum, was made. There are, of course, clinical differences between the two, but it is only in certain stages of panniculitis that histologic diagnostic features, such as infiltration of the subcutis by foam cells, are seen.

DR. HUGO HECHT (by invitation): I incline to the view that the case is erythema induratum because of the presence of giant cells. Moreover, the clinical picture is not typical for panniculitis.

DR. PERRY M. SACHS: Cases of nonsuppurative panniculitis show atrophy when they are of long duration. The buttocks, a common site of involvement, are free of lesions in this case. The microscopic picture does not show Bazin's disease. I feel that this patient has possibly an erythema-nodosum-like type of reaction or possibly a vasculitis.

DR. MAX JESSNER: This case does not impress me as one of panniculitis or erythema induratum Bazin, either clinically, or histologically. A few giant cells are not enough for the latter diagnosis. Such cases with indurations on the legs that cannot be diagnosed clinically or histologically were called erythema induratum simplex in Bern and Breslau. A number of articles were written about this whole group of cases by Klingmueller. He put all these doubtful cases together into the group of perniosis and thought that there may be transition forms between erythema induratum and indurated processes due to cold. The patient presented states that she is much better during the summer than during the winter. I think that this case possibly belongs in Klingmueller's group.

DR. HENRY SILVER: An excellent article by O'Leary appeared recently from the Mayo Clinic, giving the clinical and pathological differential diagnostic features of this troublesome group of cases with lesions on the lower extremities. In the case presented one would expect at this late date more characteristic features of panniculitis, especially atrophy. I therefore favor the diagnosis of erythema induratum.

DR. ALEXANDER A. FISHER: Occasionally a halide—a bromide, for example—will cause lesions similar to these, and that possibility should be ruled out.

DR. ABRAHAM J. ORFUSS: We considered all the diagnoses mentioned tonight and settled on the diagnosis of panniculitis because of the histopathologist's report. Parkes Weber classifies panniculitis into two types; one, the usual form; and the other a type labeled panniculitis of Rotheman-Makai (Parkes Weber, F.: Further Rare Diseases, London, Staples Press, Ltd., 1949, chap. 21). The latter group seems to fit more closely Dr. Jessner's description of erythema induratum simplex, which he applied to the case presented this evening. In these cases the nodules are painful, come and go, and subside without any atrophy whatsoever.

Cooley's Anemia Associated with Chronic Leg Ulcers. Presented by DR. FRANCES PASCHER and (by invitation) DR. RALPH KEEN.

Sickle Cell Anemia Associated with Chronic Leg Ulcers. Presented by DR. FRANCES PASCHER and (by invitation) DR. RALPH KEEN.

DISCUSSION OF PRECEDING TWO CASES

DR. FRANCES PASCHER: The occurrence of ulcers of the legs in Cooley's form of hemolytic anemia has been noted in the hematologic, but only rarely in the dermatologic, literature (Estes, J. E.; Farber, E. M., and Stickney, J. M.: Ulcers of the Leg in Mediterranean Disease, *Blood* **3**:302-306, 1948). The association of chronic ulcers of the legs with sickle cell anemia is well known. The interesting feature of both cases presented is the relative late appearance of the ulcers, at the age of 32. Generally, the ulcers appear much earlier. In view of the relatively late onset and the presence of some varicosities, varicose ulcers had to be excluded in the differential diagnosis.

Infiltrating Ulcerating Basal-Cell Epithelioma Treated with Podophyllin. Presented by DR. CHARLES WOLF.

M. M., a woman aged 66, born in Denmark, had a tuberculous gland removed on the left side of the neck 30 years ago, at the old Presbyterian Hospital. A linear scar about 5 cm. long remained. About one and a half years ago there appeared a nodule on the left side of the neck at the site of the scar; it soon broke down and formed a crust.

At present there is a crusted ulceration with an infiltrated pearly border 2 by 2.5 cm. in diameter.

Histologic examination by Dr. W. Sachs showed a thin epidermis and, extending down to the bottom of the section, a large epithelial mass arranged in lobes, lobules, strands, and bands. For the most part the neoplasm was composed of basal cells, but the palisade layer was entirely missing in the deeper portion. About the mass was considerable fibrosis and a moderate small-round-cell infiltration. There was some basophilic degeneration of the upper part of the cutis. The epidermis was thin and flattened. Over the mass the epidermis was missing, and the surface was covered with a crust. The histologic diagnosis was infiltrating disseminating basal-cell epithelioma.

Treatment consisted of an application of 20 per cent podophyllin (podophyllum resin N. F.) in alcohol on July 19, repeated on July 20, 1950. No further treatment was given. By August 14 the lesion healed completely with a smooth, slightly depressed scar.

DISCUSSION

DR. CHARLES R. REIN: There are still several small nodules present which apparently failed to respond to the treatment.

DR. RUDOLF L. BAER: There is already extensive literature on the use of podophyllin in skin carcinomas and keratoses. It is difficult to compare the results obtained by different investigators, for the procedures used vary from one report to the next. It is obvious that there are many factors which influence the result to some extent. Among these are (1) the depth of the lesion itself, (2) the frequency of application of podophyllin, (3) whether or not a semi-occlusive dressing (for example, wax paper or oil silk) is applied, (4) whether or not the necrotic material is scraped off before each reapplication, and (5) the interval between applications. It appears that most observers feel that the incidence of recurrences after treatment with podophyllin is much too high to make the method acceptable for practical use. As a matter of fact, as Dr. Rein indicated, there are already some nodules at the edge of the lesion, and it is likely that the lesion in Dr. Wolf's case is recurring.

DR. JOHN GARB: You may recall that at the April meeting I presented a patient who had superficial epitheliomas treated with podophyllin (ARCH. DERMAT. & SYPH. **60**:806 [Nov. pt. 1] 1949). After application of several occlusive dressings with an ointment containing 5 to 10 per cent podophyllin, the lesions appeared healed after 10 weeks of treatment, both clinically and histologically. A year later there were recurrences. The histologic diagnosis was then reported as basosquamous-cell epithelioma. Later on, occlusive dressings of podophyllin in strengths of 10 to 25 per cent were applied to the lesions on the back. After the ulceration healed the epitheliomas continued to recur at the borders in a ringlike manner. Sullivan reported on 15 patients with 25 cutaneous carcinomas treated with podophyllin (*Bull. Johns*

Hopkins Hosp. **85**:20-203 [Sept.] 1949). All but one basal-cell carcinoma showed satisfactory results. Subsequently Sullivan in a personal communication stated that "Since the publication of my report there have been recurrences in 4 cases and consequently additional recurrences are anticipated. My opinion is that one cannot accept podophyllin as a routine method for treating cutaneous carcinomas."

DR. ARTHUR B. HYMAN: The suggestion that one wait six months or a year for the recurrence is dangerous. It is quite possible that podophyllin kills the superficial parts of the basal-cell epithelioma so that the lesion epithelizes satisfactorily. But a biopsy should be performed on one of the nodules to determine whether or not there are deep nests of epitheliomatous cells, which may continue to invade and proliferate deeply and dangerously without surface destruction. If there are, one should remove the lesion immediately rather than wait for obvious clinical recurrence.

DR. CHARLES WOLF: I do not think the small nodules are active; they are part of the scar. Moreover, they may be occluded sebaceous glands. Podophyllin produces vascular spasm, causing ischemic necrosis and sloughing. After the first application the slough was 0.5 cm. deep. Forty-eight hours later, on removal of the slough, there was apparently a base of normal granulating tissue. At present the scar is soft and perfectly smooth.

Molluscum Contagiosum, Treated with Aureomycin. Presented by DR. HARRY B. FEILER.

L. E., a boy aged 9 yr., came to the Clinic of the Lebanon Hospital in November, 1949. He presented typical lesions of molluscum contagiosum over the left lower lateral aspect of the abdomen, the groin, and the thigh. The patient did not appear to be a good subject for removal of the lesion with the scalpel. Tincture of iodine was applied twice daily over each lesion. Re-examination on May 19, 1950, showed no spread of the lesions and no improvement. Streptomycin ointment was used until June 2, without benefit. The medication was then changed to aureomycin ointment. On June 23, the patient's mother reported slight improvement. On July 24, aureomycin capsules, 250 mg. each, twice daily, were prescribed. The patient did not tolerate the capsules well, and the medication was changed to aureomycin spersoids® (each rounded teaspoonful contains 50 mg. [3 gm.] of aureomycin), 2 teaspoonfuls, three times a day. However, only 1 teaspoonful a day was given to the child. At the end of three weeks the mother reported that the lesions had disappeared.

Examination in September, 1950, showed that all lesions had disappeared. At the site of some of the lesions there was a slight depression similar to those seen after chicken pox.

DISCUSSION

DR. ALEXANDER A. FISHER: I had no results when I treated molluscum contagiosum with aureomycin. The present patient had been treated with tincture of iodine, which may have caused the lesions to disappear. Hence, we do not have an adequate control in this case.

DR. CHARLES WOLF: I used aureomycin in treatment of a Negro boy who had about 300 lesions. After two weeks' treatment about 80 to 90 per cent of the lesions had disappeared.

DR. ABRAHAM J. ORFUSS: I can report failure in two cases with both oral and local aureomycin therapy.

DR. HARRY B. FEILER: In reply to Dr. Fisher, the iodine was applied five months previously and was of no benefit. It cannot, therefore, be considered a factor in the cure of this case. However, after the use of aureomycin all lesions disappeared.

Granuloma Annulare Disseminatum. Presented by DR. FREDERICK REISS.

Leiomyoma Cutis. Presented by DR. HANS H. BIBERSTEIN.

Nevus Linearis. Presented by DR. RAPHAEL BREAKSTONE.

Chondrodermatitis Nodularis Chronica Helicis. Presented by DR. JULIUS H. POLLOCK.

A Case for Diagnosis: Parapsoriasis? Presented by DR. ABRAHAM J. ORFUSS.

Tinea Capitis Caused by a Variant of Trichophyton Crateriforme: Two Cases. Presented by DR. FREDERICK REISS.

Prickle-Cell Epithelioma of the Lower Lip; Basal-Cell Epithelioma of Lesions Behind the Left Ear; Leukoplakia of the Mouth and Tongue; Glossitis Luetica: Nevus Flammeus of the Face. Presented by DR. DAVID B. BALLIN.

Erythema Annulare Centrifugum. Presented by DR. HANS H. BIBERSTEIN.

CHICAGO DERMATOLOGICAL SOCIETY

Theodore Cornbleet, M.D., *President*
James R. Webster, M.D., *Secretary*
Nov. 15, 1950

Histoplasmosis. Presented by DR. JAMES H. MITCHELL and (by invitation) DR. F. W. HISS.

The patient, a 58-year-old white man, was first observed by us on Oct. 26, 1950, with the following complaints: sores on his face, neck, and mouth of three months' duration, and cough and hoarseness for two and a half months.

In the first week of August, 1950, the patient noted painless red, papular lesions over the left eye, the chin, and the neck, together with some sores in the mouth. In 10 days the lesions became pustular and then umbilicated. In the next two weeks they became crusted. The lesions in the mouth are particularly painful when he eats salty food.

Three weeks after the onset of the papular lesions, he acquired a cough productive of whitish sputum which at times was blood-tinged. One week after the onset of the cough he manifested hoarseness. In the preceding month before admission, no lesions developed on his body. He lost 30 pounds (14 kg.), going from 190 to 160 pounds (86 to 72 kg.). There was no history of chills, fever, or night sweats.

He has worked as a helper in a book-binding establishment. However, he has had no contact with the leather. A brother died of tuberculosis 29 years ago, and a daughter had tuberculosis one year ago. There is no history of syphilis, eating of grasses, working in the stockyards, or traveling in California.

The positive results of physical examination on admission were as follows: blood pressure, 110/68; pulse rate, 72; respirations rate, 16, and temperature, 101.6 F. There is a granulomatous lesion on the palate. The liver is palpable 5 cm. below the costal margin. The spleen is not palpable. There are pea-sized cervical, axillary and inguinal nodes bilaterally. There is a crusted lesion on the chin and one over the left eye. Small lesions are present in the neck in the region of the cricoid cartilage. There is one lesion behind the left ear.

Examination of the blood showed hemoglobin, 15 gm.; red cells, 4,800,000, and leukocytes, 5,000, with 60 per cent neutrophils, 1 per cent eosinophils, and 39 per cent lymphocytes. The urine showed sugar, 0 to a trace; no albumin, and 2 to 3 white blood cells on microscopic examination. The blood chemistry showed nonprotein nitrogen, 35 mg., and total protein, 7.15 gm., with an albumin-globulin ratio of 1.32. The Hanger test elicited a negative reaction. In the sulfobromophthalein test there was 13.2 per cent retention.

Skin Test.—The skin reaction to histoplasmin was positive twice and negative once; to coccidioidin, negative and to blastomycin, negative. Cultures of blood, urine, and material aspirated on sternal puncture were negative. The lesion on the forehead showed a positive culture for Histoplasma capsulatum. A roentgenogram of the chest revealed no abnormality.

The treatment consisted in the administration of crysticillin® (procaine penicillin G for aqueous injection), 300,000 units twice daily from Oct. 30 to the present. He was given ethyl vanillate as indicated in the accompanying table.

Addendum.—During his stay in the hospital he acquired Addison's disease. His blood pressure was 90/60. Laboratory examination showed sodium, 115 mEq. and potassium, 5.0 mEq. The Thorn test showed no eosinophilic response. Treatment has been with aqueous adrenal cortex extract, 5 cc. every six hours, and enteric-coated sodium chloride, 1 gm. six times a day. The temperature has ranged from 99.2 to 102 F. during the hospital stay.

The condition of the patient became progressively worse, and he died on Dec. 22, 1950. No more skin, palatal, nor chest lesions developed. Addison's disease did not progress. The patient gradually lost the desire to eat or take medication. Only on one day did the blood level of the ethyl vanillate reach the theoretically therapeutic level of 20 mg. per 100 cc.

Permission for autopsy was refused by relatives.

This is the second case of histoplasmosis to have been diagnosed ante mortem at the Presbyterian Hospital in Chicago. The first was seen in April, 1943, and was reported in the *American Journal of Medicine* in 1947 (Thomas, W. A., and Mitchell, J. H.: Histoplasmosis: Report of Diagnosis from Biopsy of Cutaneous Nodules, *Am. J. Med.* **2**:538-543 [May] 1947).

Data on Treatment with Ethyl Vanillate

Day, November, 1950	Drug	Dose	Blood Level, Mg./100 Cc.	Carbon Dioxide, Vol. %
13	Ethyl vanillate	24 gm. by mouth	..	51
14	Ethyl vanillate	12 gm.	2	42
15	Ethyl vanillate	30 gm.	5	38
16	Ethyl vanillate	18 gm.	2	38
17	None	.....	2	14
18	None	.....	..	49
19	None	.....	..	..
20	None	.....	..	..
21	Ethyl vanillate	24 gm.	..	54
22	Ethyl vanillate	24 gm.	2	..
23	Ethyl vanillate	10 gm.	0	55
24	Ethyl vanillate	12 gm.	0	..
25	No vanillate	.....	..	..
26	Ethyl vanillate	12 gm.	0	..
27	Ethyl vanillate	12 gm.	0	..

DISCUSSION

DR. ROBERT KIERLAND, Rochester, Minn.: This is an excellent case. Certainly Histoplasma was amply demonstrated in the histological sections. It is unusual for one to find as many organisms as were presented here. Many times we look through slide after slide and are unable to find Histoplasma and it is only by animal inoculation and culture that we find it. It should be emphasized that histoplasmosis is not solely a cutaneous disease. It is primarily a systemic disease which starts in the nasopharynx and then progresses, involving the pulmonary apparatus and from there perhaps spreading anywhere. The spleen and the liver may be involved.

There are many things we do not know about histoplasmosis. Those of you living in southern Illinois are very familiar with the fact that pulmonary calcifications are seen in which the tuberculin test reaction is negative but the histoplasmosis test reaction is positive. It should be emphasized that the histoplasmosis test is not 100 per cent effective.

We have had the opportunity to observe three patients in whom lobectomies or pneumonectomies were done because of nodular lesions on the chest roentgenogram. Histoplasma was found on histologic section. These patients have been observed from one to three years and have been free from any other symptoms.

Microscopically Histoplasma must be differentiated from other organisms, such as those of leishmaniasis, of rhinoscleroma, and of granuloma inguinale.

DR. F. R. SCHMIDT: It would be of interest to know what the vector of this infection is. We have always looked at the disease as one present in subtropical climates. We have learned that in large cities it is sometimes endemic, for in Buenos Aires I saw four cases, three of which originated in the city. We thought at first the disease was invariably fatal. Many patients, however, recover. Several patients have been cured by the use of sulfonamides in conjunction with an autogenous vaccine, according to the method of Negroni.

DR. STURE A. M. JOHNSON, Madison, Wis.: Since histoplasmosis often heals with calcification, Addison's disease may be a sequela. We recently had a patient die whose brain had numerous small abscesses containing Histoplasma capsulatum. The presence of tuberculate spores in cultures clinches the diagnosis. These spores are not seen in the tissues.

DR. ADOLPH ROSTENBERG: I do not know whether I misunderstood Dr. Kierland, but for the record it should be pointed out that there is no immunological cross relationship between tuberculosis and histoplasmosis. The early literature seemed to indicate some cross reaction

between the testing materials, but with purer materials there is no cross reaction. The cases of pulmonary calcification with negative tuberculin reactions and positive histoplasmin reactions are just cases of histoplasmosis and not of tuberculosis. Until rather recently roentgenograms in such cases were diagnosed as showing tuberculosis, and such cases were written up as cases of so-called anergic tuberculosis or tuberculosis with tuberculin reversion. It was assumed they were tuberculosis by virtue of the lung picture, and when the test reactions were negative some vague theories on tuberculous anergy were introduced. It is important to realize this point so as not to come to erroneous immunologic concepts.

DR. F. W. HISS (by invitation): In histoplasmosis various forms of therapy, such as the administration of antimony, bismuth, iodides, and sulfonamides, and x-irradiation, have been tried. In this case we have used ethyl vanillate. Dr. Amos Christie and others at Vanderbilt University (unpublished studies) have employed this drug in 12 cases of histoplasmosis with remission in five cases. The oral dose of ethyl vanillate is 0.5 to 1 gm. per kilogram of body weight. We have been able to obtain a blood level of 5 instead of 20 mg. per 100 cc., which is considered the therapeutic level. As yet we have seen no evidence of healing of the skin lesions.

Granuloma Annulare, Generalized. Presented by DR. THEODORE CORNBLEET, DR. DAVID COHEN, and (by invitation) DR. STEFAN BIELINSKI.

DISCUSSION

DR. F. J. SZYMANSKI: I should like to suggest the use of vitamin E by mouth for granuloma annulare. A British author, Thomas Cochrane (*Brit. J. Dermat.* **62**:316 [July-Aug.] 1950), used this method in 13 cases of granuloma annulare with multiple lesions with very good results in 9 cases. I can tell you of my experience in only one case. A patient of ours with multiple lesions of granuloma annulare occurring on the trunk and extremities has had a very satisfactory response with treatment with 100 mg. of "eprolin" (a concentrate of natural alpha, beta, and gamma tocopherols) three times a day. Probably in the present patient one-third to one-half of that dose would be proper.

DR. J. E. GINSBERG: I should like to ask whether anyone has seen vitamin E cure anything.

DR. ZACHARY FELSHER: I used vitamin E in one case of necrobiosis lipoidica diabeticorum, giving it for months, and nothing happened.

DR. VERA LEAF: I used vitamin E in a similar case, and I had a good result. I used an aqueous preparation and gave calcium with it. I have had excellent results from the administration of vitamin E of the same type in cases of stasis ulcer of the leg.

Sickle-Cell Anemia with Leg Ulcer. Presented by DR. JAMES WEBSTER, DR. SAMUEL BLUEFARB, and (by invitation) DR. J. F. SICKLEY.

DISCUSSION

DR. M. H. EBERT: Hodges, in an article on sicklemia in the September number of *Blood*, brought out the interesting fact that in a study of 200-odd cases it was found that the sicklemia trait is commoner in Negroes with a small amount of white blood or American Indian blood than in the pure Negro in this country and also than in pure Negroes studied in Africa.

DR. ADOLPH ROSTENBERG: Dr. Ebert pointed out an interesting fact about the type of fingers these patients have. I wonder if he would care to comment now regarding this.

DR. M. H. EBERT: The hematologist at Cook County Hospital has called to our attention the fact that all patients with sicklemia have long, slender fingers. This trait is present in the present patient.

Periarteritis Nodosa. Presented by DR. M. H. EBERT, DR. VERA LEAF, and (by invitation) DR. J. F. SICKLEY.

The patient is a 26 year old Negro who was in Cook County Hospital about four months ago with the complaint of swelling of the ankles. When he was discharged from the hospital, the ankle edema was gone and he was feeling well.

In October, 1950, the patient began having swelling of the abdomen and epigastric pain with nausea and vomiting. The latter complaints followed an alcoholic episode.

The patient also gives a history of epileptiform seizures for the past two years. These likewise usually followed acute alcoholic episodes.

No history of allergy could be elicited.

Physical Findings.—The blood pressure was 154/120. The temperature on admission was 99.6.

On admission the abdomen was distended and fluid was ballotable. The liver was palpable 4 fingerbreadths below the costal margin. There was generalized abdominal tenderness. The spleen was questionably palpable. Two days after admission the patient manifested discrete, erythematous, elevated, and indurated patches involving both lower extremities over the anterior tibial regions. These gradually disappeared, only to be followed by nodules on the extensor surfaces of both forearms. The nodules seemed to follow the course of the blood vessels. Shortly after this, similar nodules were palpable on the thighs.

During the first two weeks of hospitalization the patient had repeated bouts of chills and fever, but since then he has been afebrile.

Biopsy of a nodule revealed the picture of periarteritis nodosa.

DISCUSSION

DR. LOUIS A. BRUNSTING, Rochester, Minn.: In this patient there are very few active lesions at present, but the microscopic picture is typical of periarteritis nodosa. He lacks eosinophilia but has some tendency toward hypertension. All in all, the symptoms have been rather mild and it is likely that in a number of cases of this type the patients pass through a siege of the disorder without serious sequelae. The experience of my colleagues and me with ACTH and cortisone in periarteritis nodosa has been summarized by Shick and associates (*Proc. Staff Meet., Mayo Clin.* **25**:135 [March 15]; 492 [Aug. 16] 1950; Am. J. Path. **26**:709 [July] 1950). In most cases there is a prompt symptomatic response which is reflected in the healing of the vascular lesions microscopically, but in two of the more seriously ill patients there was fatal termination from cardiac failure.

DR. F. R. SCHMIDT: I agree with Dr. Brunsting. I think, however, that we should also consider a benign form of periarteritis nodosa which is possibly related to nodular vasculitis. There is an interesting article by McLean and More (*Proc. Soc. Exper. Biol. & Med.* **71**:684 [Aug.] 1949), which relates how they produced lesions identical with those we saw today in the artery in animals sensitized to an antigen. We learned from Selye's work that a similar arteritis is also produced in other ways, particularly in people with disease of the adrenal cortex. The interesting thing about McLean and More's work is that arteritis of this nature can probably be prevented by the administration of large doses of ammonium chloride over a long period of time.

A Case for Diagnosis: Bullous Lupus Erythematosus or Pemphigus Erythematosus. Presented by DR. STURE A. M. JOHNSON, Madison, Wis.

A Case for Diagnosis: (Unilateral Anhidrosis of the Palm). Presented (by invitation) by DR. ALLAN L. LORINCZ.

Kaposi's Multiple Idiopathic Hemorrhagic Sarcoma. Presented by DR. PAUL R. GRIFFITH.

Leukoderma from Rubber Garment, in Negro Woman. Presented by DR. S. J. ZAKON and (by invitation) DR. A. L. GOLDBERG.

Reticulohistiocytoma. Presented by DR. MARCUS R. CARO. (To be published in full.)

A Case for Diagnosis: Spiegler-Fendt Sarcoid? Hodgkin's Disease? Presented by DR. THEODORE CORNBLEET and DR. BEN Z. FIRESTEIN.

Pseudotuberculoma Silicoticum? Boeck's Sarcoid? Lichenoid Tuberculid? Presented by DR. E. A. OLIVER and Staff.

Boeck's Sarcoid? Presented by DR. E. A. OLIVER and Staff.

Lichen Nitidus. Presented by DR. E. M. SMITH and DR. R. M. OLIVER.

Lymphoblastoma (Mycosis Fungoides?). Presented by DR. E. M. SMITH JR. and DR. JULIUS GINSBURG.

Erythema Annulare Centrifugum. Presented by DR. STEPHEN ROTHMAN and (by invitation) DR. CALVIN J. DILLAHA.

Left Facial Hemiatrophy: History of Trauma. Presented (by invitation) by DR. CALVIN J. DILLAHA.

Lichen Spinulosus. Presented by DR. THEODORE CORNBLEET and (by invitation) DR. STEFAN BIELINSKI.

Lichen Striatus? (Lichen Planus?) (Lichen Nitidus?) Presented by DR. THEODORE CORNBLEET, DR. HENRY SCHORR, and (by invitation) DR. J. F. SICKLEY.

Solid-Edema-Like Lesion of Nasolabial Fold with Nasal Fissure Improved with X-Ray Therapy and Zincundecate (Desenex®). Presented by DR. THEODORE CORNBLEET, DR. HENRY SCHORR, and (by invitation) DR. J. F. SICKLEY.

Scalenus Anticus Syndrome with Gangrene of the Finger Tips. Presented by Dr. Theodore Cornbleet, Dr. Henry Schorr, and (by invitation) Dr. J. F. Sickley.

A Case for Diagnosis: Bullous Eruption of Seven Months' Duration—Dermatitis Herpetiformis? Pemphigus? Presented by Dr. David Omens and (by invitation) Dr. Harold Omens and Dr. J. F. Sickley.

Erythema Induratum. Presented by Dr. David Omens and (by invitation) Dr. Harold Omens and Dr. J. F. Sickley.

Osteoarthropathy Associated with Carcinoma of the Lung. Presented by Dr. James Webster, Dr. Samuel Bluefarb and (by invitation) Dr. Stefan Bielinski.

Multiple Epitheliomas of the Face and Trunk. Presented by Dr. Herbert Rattner, Dr. Harold Rodin, and (by invitation) Dr. Stefan Bielinski.

Epilola. Presented by Dr. David Omens and (by invitation) Dr. Harold Omens and Dr. Stefan Bielinski.

Rhinophyma with Chronic Erythremia. Presented by Dr. Theodore Cornbleet, Dr. David Cohen, and (by invitation) Dr. J. F. Sickley.

News and Comment

Will the secretaries of the dermatologic societies who have not already done so please send to the Chief Editor the names of the officers of their societies for the ensuing year, for inclusion in the Directory of Dermatologic Societies?

GENERAL NEWS

Specialists Certified by the American Board of Dermatology and Syphilology.—At the last meeting of the American Board of Dermatology and Syphilology, held in New York, June 8 to 10, 1951, the following candidates were found proficient and are now certified as specialists by this Board: Irving Baer, Red Bank, N. J.; Edward M. Barr, Mobile, Ala.; Arlington Bensel, Orange, N. J.; Peter V. O. Bisconti, New York; Harold L. Boyer, Jacksonville, Fla.; George L. Brown, Charlotte, N. C.; Robert N. Bugg, Austin, Texas; Benjamin B. Burrill, Jr., Montclair, N. J.; Patrick J. Costello, Wynnewood, Pa.; Alfred R. Cukerbaum, Youngstown, Ohio; William H. Doyle, Muskogee, Okla.; Elfe F. W. Ehrenreich, New York; Ernest T. Fox, Oceanside, Calif.; Forman Friend, Cincinnati; Samuel B. Frischberg, Brooklyn; Frederick W. Good, New York; Robert L. Griffith, Utica, N. Y.; Vinton Hall, Oceanside, Calif.; Brace F. Hartwell, Orange, Calif.; Leonard V. Kornblee, New York; Oscarre Landi, New York; Paul LeVan, Los Angeles; A. Buist Litterer, Miami, Fla.; Ralph Luikart, II, Santa Barbara, Calif.; John R. Munger, Ventura, Calif.; John M. Murray, New York; Helen J. Neave, New York; Orland S. Olsen, San Francisco; William K. Reed, New Orleans; Oliver Rian, Peoria, Ill.; Richard J. Rowe, Marshfield, Wis.; Rufus C. Rucker, Los Angeles; Andrew P. Sackett, Seattle; Howard K. Schwarzfeld, University City, Mo.; Clarence A. Smith, New Orleans; Edward C. Smith, Jamaica, N. Y.; Urban L. Throm, II, Hot Springs National Park, Ark.; Carle D. Walsh, Staten Island, N. Y.; Wilfred E. Wooldridge, Springfield, Mo.

The dermatologists in the following list also passed the examination and will become certified specialists of this Board after they have completed five years in the specialty: G. Douglas Baldridge, West Los Angeles, Calif.; Marjorie, F. Bauer, Alhambra, Calif.; Samuel W. Becker, Jr., Rochester, Minn.; James H. Bennett, Oakland, Calif.; Minerva S. Buerk, Philadelphia; Arthur M. Burton, Philadelphia; William C. Croom, Jr., MacDill Air Force Base, Fla.; Richard Q. Crotty, St. Louis; Richard B. Ewing, Battle Creek, Mich.; William H. Eyster, Jr., Toledo, Ohio; Thomas B. Fitzpatrick, Rochester, Minn.; William T. Ford, Philadelphia; Sheldon B. Goldstone, Scranton, Pa.; Alfred W. Graves, Jr., Long Beach, Calif.; Ralph W. Grover, Queens Village, N. Y.; Merle A. Haanes, Beverly, Mass.; Daniel E. Hackbarth, New York; Raymond A. Havrilla, Jamaica, N. Y.; James T. Hearin, Baltimore; Walter E. Horn, Fort Sam Houston, Texas; John A. Hosmer, Los Angeles; Louis Jaffe, Philadelphia; Stanley J. Kallman, Woodside, L. I., N. Y.; Albert M. Kligman, Philadelphia; Allan L. Lorincz, Chicago; Emmett S. Lupton, Yonkers, N. Y.; Philip L. McCarthy, Camp Atterbury, Ind.; John G. McConahy, III, New Castle, Pa.; Lila R. McCorriston, Montreal, Que.; Hugh McCulloch, Jr., Baltimore; James P. McGinley, San Francisco; Edward H. Mandel, New York; Herbert Mescon, Philadelphia; Robert J. Morgan, Stony Brook, L. I., N. Y.; Donald C. Nuwer, Tonawanda, N. Y.; William A. Phillips, Durham, N. C.; James A. Philpott, Jr., Denver; William E. Ragsdale, St. Louis; Joseph D. Rubin, Bronx, N. Y.; Gordon C. Sauer, St. Joseph, Mo.; Charles Sherter, Baltimore; William N. Slinger, Cincinnati; William F. Spiller, Houston, Texas; John J. Stewart, Cleveland; Richard B. Stoughton, Chicago; John G. Thomsen, Cleveland; William T. Watkins, Jr., Durham, N. C.; Walter E. Weber, Rochester, Minn.; Clayton E. Wheeler, Charlottesville, Va.; Charles Jackson Young, Oklahoma City.

Applications to Read Papers at Tenth International Congress.—The Academic Committee of the Tenth International Congress of Dermatology is now prepared to receive applications from dermatologists to read short papers at the Congress, which will be held in London, July 21 to 26, 1952.

The speakers will have 15 minutes in which to present their papers, and in the majority of instances this will be followed by a discussion which will not exceed 15 minutes. Chairmen of meetings will be asked to insist on the 15-minute schedule.

Those interested in participating in this program will please send by Jan. 1, 1952, the titles of their communications and an accurate note concerning their names, appointments, and degrees, which will be used for publication purposes, to Dr. Louis A. Brunsting, 102-110 Second Ave. S.W., Rochester, Minn.

Annual Meeting of the Japanese Dermatological Association.—The 50th annual meeting of the Japanese Dermatological Association (founded 1900) was held in the auditorium of the Japanese Medical Association, Ochanomizu, Tokyo, on April 2 and 3, 1951. More than 500 persons were in attendance, approximately 70 papers were presented, and 34 patients were presented from 14 clinics.

The address of the president, Dr. Kitamura, was on "Treatments of Eczema and Eczematous Disease." The topics discussed were vitamin metabolism; functions of the adrenal glands in skin diseases; transplantation of the hypophysis, thyroid glands, and other organs for the treatment of alopecia areata, scleroderma, and other diseases. Tissue cultures of the human epidermis were of special interest. The results of the use of cardiolipin and the effects of penicillin treatment of syphilis were reported from several clinics.

ANNOUNCEMENTS

Earl D. Osborne Fellowship in Dermal Pathology.—This fellowship, sponsored by the American Academy of Dermatology and Syphilology, is to provide annually the opportunity for one year's study and training in dermal pathology to a postgraduate student who has completed satisfactorily at least two years of training in dermatology or one of its allied branches in accordance with the requirements of the American Board of Dermatology and Syphilology. A stipend of $2,000 will be given to the candidate selected. The period of training will be spent at the Armed Forces Institute of Pathology, Washington, D. C., the appointment being subject to approval by the Director of the Institute. As the American Board of Dermatology and Syphilology has approved the Institute for one year of training, the time spent will be accredited by the Board. The primary purpose of this fellowship is to train dermal pathologists. The large amount of material in dermal pathology at the Institute will be available for study, and, under special circumstances and with approval, original research may be undertaken under the direction of the chief of the dermal pathology section of the Institute.

Dermatologists in training who are interested may obtain application blanks for the Earl D. Osborne Fellowship from Dr. Hamilton Montgomery, 102-110 Second Ave., S. W., Rochester, Minn., Chairman of the Committee on Pathology of the American Academy of Dermatology and Syphilology. The next available appointment begins July 1, 1952.

American Dermatological Association, Inc., Annual Prize Essay Contest.—The American Dermatological Association is again offering a prize of $300 for the best essay submitted for original work, not previously published, relative to some fundamental aspect of dermatology or syphilology. The purpose of this contest is to stimulate younger investigators to original work in these fields.

Manuscripts typed in English with double spacing and ample margins, as for publication, together with illustrations, charts, and tables, all of which must be in triplicate, are to be submitted not later that Dec. 1, 1951. The manuscripts should be sent to Dr. Louis A. Brunsting, Secretary, American Dermatological Association, Inc., 102-110 Second Ave., S. W., Rochester, Minn., and those which are incomplete in any of the above respects will not be considered.

Competition in this prize contest is open to scientists generally, not necessarily physicians.

The award will be made by a committee of judges selected to pass on the essays by the Research Aid Committee of the American Dermatological Association, and the decision of the judges shall be final. The essays are judged on the following considerations: (1) originality of ideas, (2) potential importance of the work, (3) experimental methods and use of controls, (4) evaluation of results, (5) clarity of presentation, (6) historical background, and (7) bibliography. This contest is planned as an annual one, but if in any year at the discretion of the committee and judges no paper worthy of a prize is offered, the award may be omitted.

The prize-winning candidate may be invited to present his paper before the annual meeting of the American Dermatological Association with expenses paid in addition to the prize of $300. Further information regarding this essay contest may be obtained by writing to the secretary of the American Dermatological Association.

The next annual meeting of the American Dermatological Association, Inc., will be held April 23 to 26, 1952, at the Broadmoor Hotel, Colorado Springs, Colo.

Book Reviews

Atlas der Haut- und Geschlechtskrankheiten: Geschlechtskrankheiten. By L. Arzt and J. Tappeiner. Price, 88 German marks. Two hundred and sixty-six color reproductions on 87 plates with captions in Latin and an attached booklet of 87 pages in which the salient features of each picture are pointed out in German. Vienna and Innsbruck, Urban and Schwarzenberg, 1950.

Well aware of the regard for tradition so strong in Austrian medical scientists the authors have produced this monumental volume in memory of Ferdinand von Hebra and the Imperial Austrian Academy of Sciences whose joint effort a hundred years ago resulted in the publication of the famous "Atlas der Hautkrankheiten," now a volume much prized by dermatologic bibliophiles. The new work is devoted entirely to syphilis. For the illustrations, the authors chose water colors by a noted artist rather than photographs because they believed the water colors could be reproduced with greater accuracy. Most of the pictures of the various manifestations, for example, of the roseolas and leukodermas, the extragenital primary lesions and the syphilids of the oral mucous membranes, are quite true to life. The same degree of perfection is not achieved in the depiction of all the pustular syphilids and gummas.

The authors point out in their introduction that the postwar conditions prevailing in their country made for a tremendous upsurge in syphilis and the consequent enormous clinical material on which this work is based. The atlas contains the most complete array of the manifestations of mucocutaneous syphilis ever assembled and will thus serve well as an aid in the teaching of postgraduate students who will at least learn from pictures what they can hardly expect now to see.

The riches in the atlas evoke in the American dermatologist, who greets the occasional syphilid observed in his office as a long-forgotten friend, a sense of nostalgia for the time when the fine art of evaluating the cutaneous manifestations in the light of a time sequence and determining the duration of the infection from their appearance was one of the earmarks of the well trained syphilologist. The atlas will serve as a monument or, better, as a tombstone for a vanishing disease.

Bistrimate Tablets (SMITH)

well tolerated, orally effective
Systemic Bismuth Therapy
with an increasing range of
Clinical Effectiveness

Following bibliography which is constantly increasing, and summaries of these reports, are available upon request:

1 Gross, Elmer R., M.D.; Wright, Carroll S., M.D.; Oral Bismuth Therapy in Syphilis and Various Dermatoses—Paper presented at the Pennsylvania Medical Society Meeting, October 8, 1946 at Philadelphia, Pennsylvania.

2 Gross, Elmer R., M.D.; Howles, James K., M.D.; Non-Specific Treatment of Dermatoses and Adjunctive Therapy of Syphilis with Oral Sodium Bismuth Triglycollamate. Read before the Section of Dermatology and Syphilology Meeting of the Centennial Meeting of the A.M.A. at Atlantic City, New Jersey, June 12, 1947.

3 Year Book of Dermatology and Syphilology, 1946, page 31.

4 Sawicky, H. H., M.D.; Bistrimate (sodium bismuth triglycollamate) Administered by Mouth in the Treatment of Chronic Discoid Lupus Erythematosus. The Journal of Investigative Dermatology, vol. 9 #3 September 1947.

5 Howles, James K., M.D.; Treatment of Inflammatory-Dermatoses with Oral Bismuth (sodium bismuth triglycollamate). Southern Medical Journal, vol. 41 #11, pages 1033-1041, November 1948.

6 Pascher, Frances, M.D.; Sawicky, H. H., M.D.; Silverberg, M.G., M.D.; and Emmet, Richard, M.D.; Bistrimate for Lupus Erythematosus, Lichen Planus and other Dermatoses. Journal of Investigative Dermatology, vol. 10, #6, June 1948.

7 Miller, Thomas H., M.D. and Delaney, James R., M.D.; Oral Bismuth therapy in Dermatology. Archives of Dermatology and Syphilology, Vol. 60, August 1949.

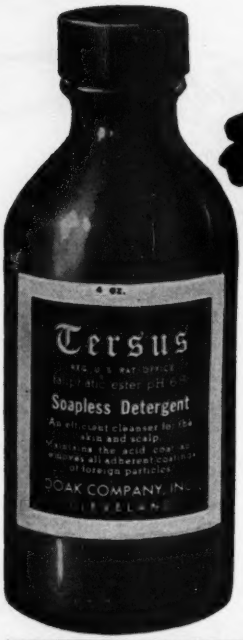
Each tablet contains 410 mg. of sodium bismuth triglycollamate, equivalent to 75 mg. of metallic bismuth. Bistrimate rapidly establishes and maintains therapeutically effective excretion levels of bismuth.

Clinical Indications:

Recently published reports reveal that interesting results have been obtained from the clinical use of Bistrimate-Smith in certain dermatological conditions such as lupus erythematosus and lichen planus. Bistrimate may be employed in conjunction with arsenicals in the treatment of all types of syphilis.

CARROLL DUNHAM SMITH
PHARMACAL COMPANY
SERVING GENERATIONS OF PHYSICIANS
established 1844

ACCEPTED
PHARMACY
CHEMISTRY



Tersus

*SOAPLESS DETERGENT

An efficient cleanser—

for the hands and scalp

Maintains the acid coat and removes all adherent coatings of foreign particles. Aliphatic ester pH6.8, which is slightly acid. Does not contain any free fatty acids or alkalis.

Recommended for use in cases where soap has a tendency to cause dermatitis or aggravate skin disorders . . . does not form the precipitation of calcium soaps.

Tersus has been clinically tested by dermatologists and is considered to be comparatively free from irritating qualities.

Write for sample and literature

AD 8-51

DOAK COMPANY, INC. CLEVELAND, OHIO

SUPPLEMENT to EXPERIENCE

A.M.A. Archives of INTERNAL MEDICINE

UNDER some circumstances, sometime in his career, practically every physician becomes an internist. Contact with forward-moving practices and opinions in the internal medicine field . . . provided in A. M. A. INTERNAL MEDICINE . . . supplies confirmation and supplements experience for both the specialist and the physician in general practice.

Featured each month will be comprehensive original articles, case reports, clinical studies, progress reports, correspondence, news and comment, book reviews.

Able editorial leadership.

Outstanding contributions.

AMERICAN MEDICAL ASSOCIATION
535 N. Dearborn St., Chicago 10, Illinois.

Please Begin My Subscription to A. M. A. Archives of INTERNAL MEDICINE with the Next Issue.

.....M.D.

.....STREET

.....CITY & STATE

$10.00 YEARLY

$11.00 FOREIGN $10.40 CANADIAN

Simplified and improved

psoriasis therapy

DESPITE its disadvantages, the effectiveness of Goeckerman's method has led many to follow his technique of treatment of psoriasis. The crude coal tar suggested is messy and unpleasant in application. Frequently its use in conjunction with ultra-violet light requires hospitalization.

The recently published modification* of Goeckerman's method utilizes simpler routines and Wright's Liquor Carbonis Detergens in place of ordinary crude coal tar.

Wright's Liquor Carbonis Detergens provides the whole of the antiseptic virtues of coal tar without tackiness. It has long proved satisfactorily effective in the treatment of psoriasis. Its use is neither messy nor unpleasant for the patient. Ultra-violet light is optional.

4 *ADVANTAGES*

1. More acceptable to the patient—easy to apply, not messy.
2. Obviates the necessity for ultra-violet light.
3. Usually avoids hospitalization.
4. Readily compounded into many coal-tar ointments and lotions.

Send for sample

Physicians are invited to send for a multiple sample of Wright's Liquor Carbonis Detergens so that they may have ample personal evidence of its effectiveness. This sample is sufficient for several treatments.

WRIGHT'S

liquor carbonis detergens

Alcoholic Solution of Coal Tar

**Ellis, Calvin C., Wooldridge, Wilfred E., and Weiss, Richard S.: The Journal of Investigative Dermatology, Vol. 10, No. 6, June 1948*

Distributed by E. Fougera & Co., Inc., 75 Varick St., New York, N. Y.

For a clean scalp..

YOU HAVE undoubtedly told many of your patients that a clean scalp is as important as clean hands... that a healthy scalp has much to do with a healthy skin, particularly the skin of the face.

Perhaps you have recommended the use of Packers Tar Soap. As a gentle, pleasant and dependable cleansing agent for the scalp and hair, Packers has won the approval of many dermatologists.

Packers also offers the advantage of economy. Shampoos with this famous cake soap average less than a penny—about one-fourth the cost of bottled shampoos.

PACKERS TAR SOAP, INC.
MYSTIC, CONNECTICUT

TO HELP YOUR PATIENTS AND SAVE YOU TIME

Booklets on Eyesight

These booklets prepared especially for the American Medical Association will answer many of your patients' questions for you. Among the titles, you will undoubtedly find topics you've had to discuss at length with patient after patient taking up time that you could have used to *treat* other patients. Let these booklets solve that problem for you.

WHOM SHALL I CONSULT ABOUT MY EYES? F. T. Jung. 8 pages. 15 cents.

EYES-RIGHT ! Audrey McKeever. 14 pages. 15 cents.

HOW TO SAVE YOUR EYES. Cleo Du Bois. 4 pages. 15 cents.

SHOULD YOUR CHILD WEAR GLASSES? J. Robert Burke. 12 pages. 15 cents.

NEW EYES FOR OLD CORNEAL TRANSPLANT. Max Fine. 10 pages. 20 cents.

GLAUCOMA. Arthur A. Knapp. 12 pages. 15 cents.

CATARACT. Abram B. Bruner. 12 pages. 15 cents.

CONTACT LENSES. Marguerite Shields. 3 pages. 10 cents.

COLOR BLINDNESS. Dean Farnsworth and Conrad Berens. 2 pages. 15 cents.

VISUAL EFFICIENCY. Henry A. Imus. 8 pages. 15 cents.

WHAT TO DO FOR BLIND CHILDREN. Park Lewis. 26 pages. 15 cents.

EYE PHYSICIANS, OPTICIANS AND THEIR WORK. Edward Jackson. 22 pages. 15 cents.

PERFECT EYESIGHT WITHOUT GLASSES. Meyer Wiener. 2 pages. 10 cents.

ONE EYE SEES EVERYTHING. Phyllis Duke-Elder. 2 pages. 10 cents.

Keep a supply on hand. Available at lower cost for quantity purchases. Write for prices.

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street
Chicago 10, Illinois

Which girl has the natural curl . . . and

WHICH GIRL HAS THE TONI? (See answer below)

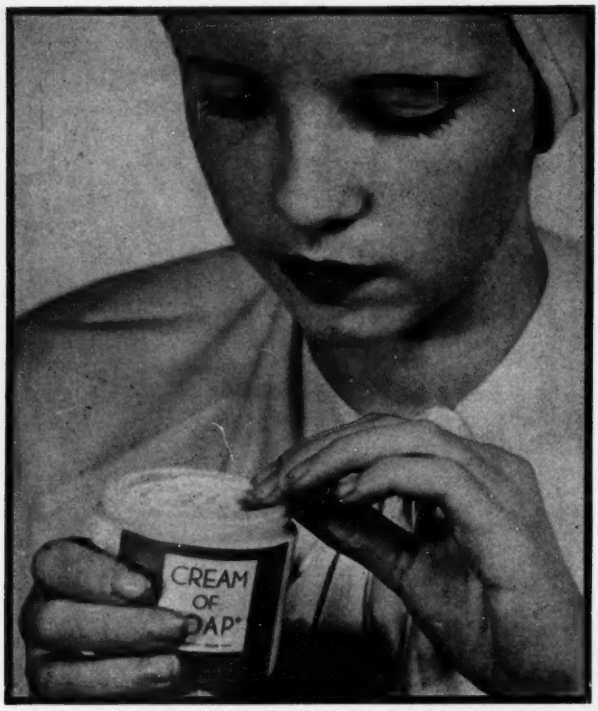
New Toni Neutralizer. Permafix, the new Toni neutralizer, has been accepted by the Committee on Cosmetics of the American Medical Association.

Permafix is safer. Years of extensive research have gone into the development of a new neutralizer to replace the potassium bromate neutralizer. Bromate neutralizer, generally used in home waves, could be toxic if accidentally ingested. Now Toni is the only home permanent kit to have Permafix. It consists of sodium perborate and sodium hexametaphosphate, a formulation with considerably lower toxicity. In the research studies, all experimental animals survived more than the "human dose" (based on body weight).

Permafix is better. Not only is Permafix safer, but it is also better. It works faster, is chemically more efficient, and leaves hair in excellent condition.

Proved in research, proved in use. More women use Toni than all other home permanents combined . . . 100,000,000 successful waves to date. Lovely Eva Gernay, on the right, has the Toni.

THE TONI COMPANY • MERCHANDISE MART • CHICAGO 54, ILLINOIS



For more than ten years, dermatologists in all parts of the country have ordered

CREAM OF SOAP
THE COLLOIDAL SKIN CLEANSER

in increasing quantities for their patients.

PERSONAL LUXURIES COMPANY
55 West 16th St., New York 11, N. Y.

SEX EDUCATION BOOKLETS

★ THOSE FIRST SEX QUESTIONS
For parents of little children. Wholesome home life, character training and accurate answers to first sex questions are fundamental.

★ THE STORY OF LIFE
For boys and girls, ten years of age, telling them how the young come to plants, animals, and human parents.

★ IN TRAINING
For boys of high school age, interpreting their adolescent development in terms of athletic and other achievements.

★ HOW LIFE GOES ON
For girls of high school age. Their role as mothers of the men of tomorrow.

★ THE AGE OF ROMANCE
For young men and women, dealing with the problem as a unit for both sexes.

A Series of Five Modern Booklets

FOR YOUNG PEOPLE
by Thurman B. Rice, M.D.

Written by Dr. Rice, physician, public health official, teacher and father. Frank, but not sensational. Progressive viewpoints stressed, while fundamental principles are maintained. These pamphlets may first be read by parents, then given children according to age. Attractively printed.

25c each. Complete set of five in special filing case, $1.00. Heavy paper covers. Illustrated.
AMERICAN MEDICAL ASSOCIATION, 535 N. Dearborn, Chicago 10

Luzier's Service In The Field Of Allergy

When patient has history of cosmetic sensitivity, or when cosmetics may reasonably be suspected as a contributing if not the etiological factor in your patient's symptoms of allergy, we suggest:

1) Primary tests with those of our products your patient is using or contemplates using, to eliminate products to which there is no demonstrable reaction. (We suggest patch testing because it simulates normal conditions of use. The inside of forearm is good field for these tests.)

2) Secondary tests with constituents of products causing reaction, to trace offending agents. (In specific cases, on written request, we supply testing materials, gratis.)

3) Modification of formulae, when possible, to eliminate ingredients to which patient demonstrated a sensitivity. (We extend this service to our patrons without extra charge.)

4) Final check tests with modified formulae to make certain there is no reaction.

Preparations by Luzier are regularly available in an unscented variation. They do not contain orris root or rice starch. Any of their normally harmless constituents, however, is potentially allergenic, for which reason we suggest testing, when practicable. Fees for such tests are patient's responsibility

LUZIER'S, INC., MAKERS OF FINE COSMETICS . . KANSAS CITY 3, MO.

AND NOW *A New Grip on Problems of Industrial Medicine*

THROUGH A Journal Designed For Your Interests

A. M. A. Archives of INDUSTRIAL HYGIENE and OCCUPATIONAL MEDICINE

Edited by men of outstanding reputation in the fields of industrial health and preventive industrial hygiene: Prof. Philip Drinker, Boston, Chief Editor; Robert Kehoe, M.D., Cincinnati; James Sterner, M.D., Rochester, N. Y.; Frank Patty, Detroit, Mich.; Theodore Hatch, Pittsburgh; Frank Princi, M.D., Cincinnati; Fenn E. Poole, M.D., Glendale, Calif.; William A. Sawyer, Rochester, N. Y.

Covering the research and field aspects of industrial hygiene and the clinical and medical aspects of occupational industrial health programs.

Merging the best features of *Occupational Medicine* and *The Journal of Industrial Hygiene and Toxicology.*

Integrated closely with the activities of the Council of Industrial Health of the A. M. A. and the American Industrial Hygiene Association.

A Better and More Useful Journal of Industrial Medicine!

Such is the result which the Editorial Board of A. M. A. Archives of INDUSTRIAL HYGIENE and OCCUPATIONAL MEDICINE has achieved by combining parallel publications.

To the thousands of physicians who are directly or indirectly concerned today with medicine in industry, the new journal will bring reports of the continuing and important developments in the field, with original articles covering problems and day to day experiences of physicians in industry; an excellent abstracting service similar to that carried in the *Journal of Industrial Hygiene and Toxicology;* additional foreign journal abstracting; reviews.

Whether servicing industrial firms, attending employees, applying to general practice some of the findings of industrial medicine, or merely *watching* this expanding field, you will want to receive this vital new periodical.

AMERICAN MEDICAL ASSOCIATION
535 N. Dearborn Street, Chicago 10

Enter my subscription to A. M. A. Archives of INDUSTRIAL HYGIENE and OCCUPATIONAL MEDICINE to start *with the next issue.* Per year, $8.00 in U. S. (Canadian, $8.40; Foreign, $9.00).

I enclose check..... Please bill me.....

Name.....

Address.....

CANCEL
CREAM DEODORANT

Containing Aluminum Chlorhydroxide Complex

Stays Creamy
Prevents Odor
Controls Underarm Perspiration
Without Fear of Irritation to Normal Skin or Harm to Clothing

SAMPLE TO PHYSICIANS IN U. S. ON REQUEST

Wright & Lawrence Laboratories, Inc.
14 NORTH MICHIGAN AVENUE • CHICAGO 2

Pleasingly and efficiently
serving patient and physician
during winter months

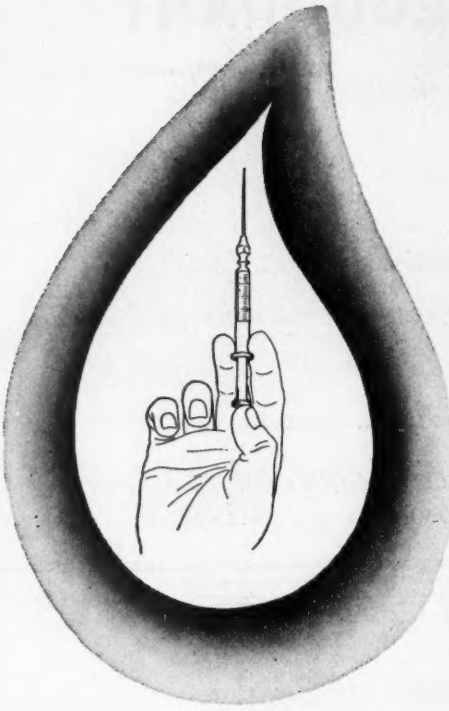
SUPERFATTED
BASIS SOAP

For dry sensitive skin

DUKE LABORATORIES, INC
STAMFORD, CONN. U.S.A.

Mfgrs. ofAquaphor—Elastoplast.

Dihydrostreptomycin Sulfate



a Drug of Choice

for Physician and Patient

Extremely well tolerated and rarely causing irritation on injection, Dihydrostreptomycin Sulfate has become a most widely accepted streptomycin preparation.

***Comparative studies by leading clinicians confirm that* DIHYDROSTREPTOMYCIN SULFATE IS—**

as effective as streptomycin [2, 9, 13-15]

less toxic for the vestibular apparatus [1-15]

minimizes pain and swelling at the site of injection [6, 10]

may be used even in patients showing allergic response to streptomycin [2, 9, 10, 11]

Extensive experimental studies [6, 9, 16-18] ***proved* CRYSTALLINE DIHYDROSTREPTOMYCIN SULFATE MERCK *less toxic for the vestibular system.***

BIBLIOGRAPHY

(1) Tompsett, R., and McDermott, W., Am. J. Med. *7*: 371-381, Sept. 1949. (2) Tompsett, R., Ann. Otol., Rhin. & Laryng. *57*: 181, March 1948. (3) Sweany, H. C., Dis. Chest *15*: 631-656, June 1949. (4) Lincoln, S., Science News Letter *55*: 307, May 14, 1949. (5) Semans, J. H., J. M. A. Georgia *38*: 477-480, Nov. 1949. (6) Domon, C. M., Kilbourne, P. C., and King, E. Q., Amer. Rev. Tuberc. *60*: 564, 575, Nov. 1949. (7) Nagley, M. M., Brit. M. J. *1*: 248, Jan. 28, 1950 (in correspondence). (8) Committee on Medical Research and Therapy, American Trudeau Society, Am. Rev. Tuberc. *61*: 436-440, March 1950. (9) Carr, D. T., Hinshaw, H. C., Pfuetze, K. H., and Brown, H. A., Dis. Chest *16*: 801-821, Dec. 1949. (10) Odell, J. M., Dis. Chest *16*: 818, Dec. 1949. (11) (Editorial) New England J. Med. *240*: 736, May 5, 1949. (12) Keefer, C. S., Ann. Int. Med. *33*: 582-589, Sept. 1950. (13) Marsh, D. F., W. Va. Med. J. *45*: 280-284, Oct. 1949. (14) Johnson, H. M., J. Invest. Dermat. *15*: 61-66, July 1950. (15) Hinshaw, H. C., Personal communication. (16) Lincoln, N. S., Horton, R., Stokes, A. M., Monroe, J., and Riggins, H. M., Am. Rev. Tuberc. *62*: 572-581, Dec. 1950. (17) Carr, D. T., Brown, H. A., Hogson, C. H., and Heilman, F. R., J. A. M. A. *143*: 1223-1225, Aug. 5, 1950. (18) Jacoby, A., Goldberg, W., Sobel, N., and Rosenthal, T., Am. J. Syph., Gonor. & Ven. Dis. *34*: 185-186, March 1950.

Supplied By Merck In The Purest Form Available—

CRYSTALLINE DIHYDROSTREPTOMYCIN SULFATE MERCK

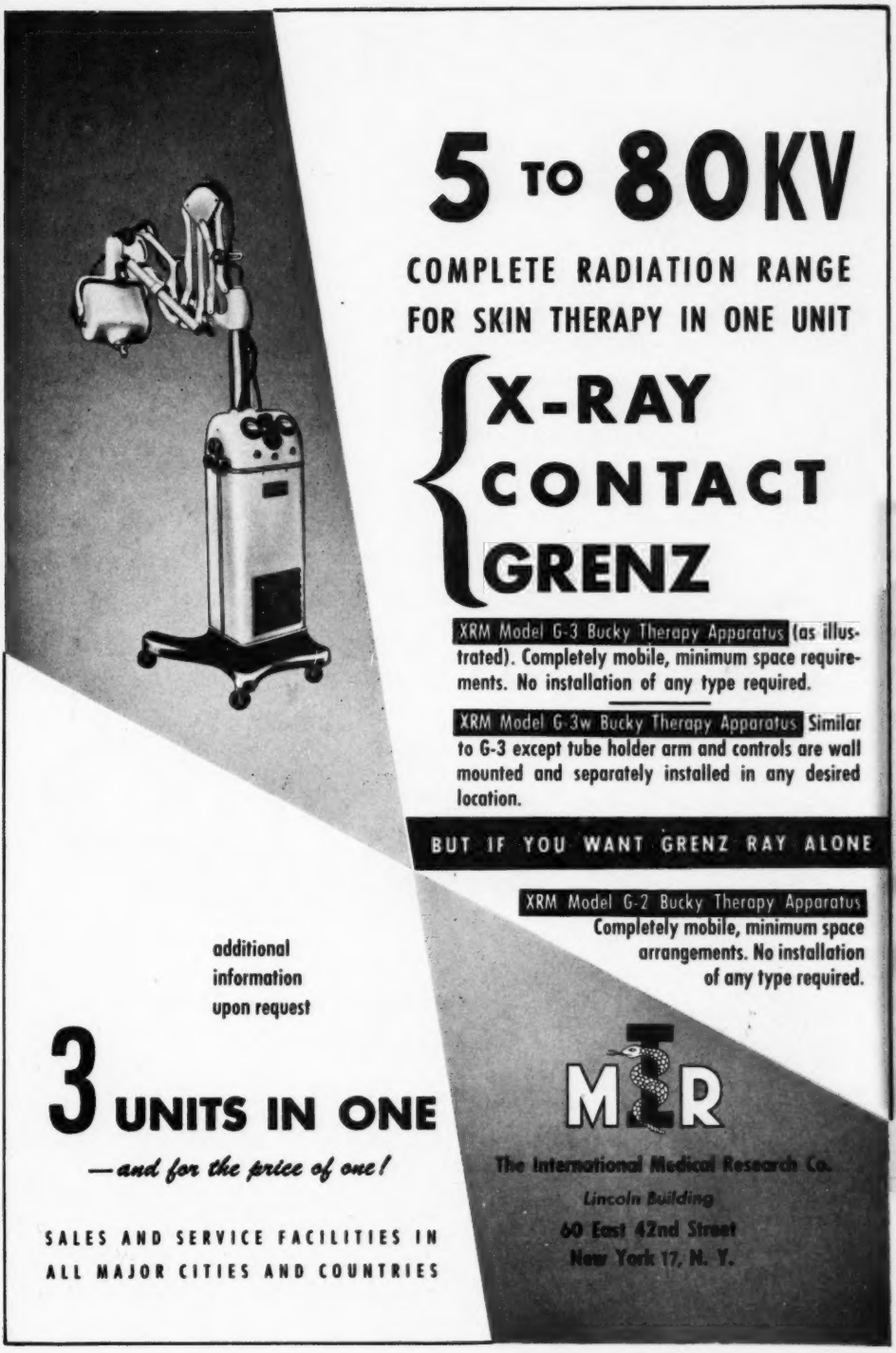
Crystalline Dihydrostreptomycin Sulfate Merck is supplied in convenient 1 Gm. and 5 Gm. vials.

MERCK & CO., INC.

Manufacturing Chemists

RAHWAY, NEW JERSEY

In Canada: MERCK & CO. Limited—Montreal



5 TO 80 KV

COMPLETE RADIATION RANGE FOR SKIN THERAPY IN ONE UNIT

{ X-RAY
{ CONTACT
{ GRENZ

XRM Model G-3 Bucky Therapy Apparatus (as illustrated). Completely mobile, minimum space requirements. No installation of any type required.

XRM Model G-3w Bucky Therapy Apparatus Similar to G-3 except tube holder arm and controls are wall mounted and separately installed in any desired location.

BUT IF YOU WANT GRENZ RAY ALONE

XRM Model G-2 Bucky Therapy Apparatus
Completely mobile, minimum space arrangements. No installation of any type required.

additional information upon request

3 UNITS IN ONE

—and for the price of one!

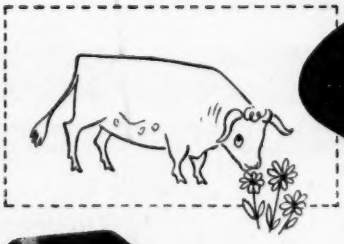
SALES AND SERVICE FACILITIES IN ALL MAJOR CITIES AND COUNTRIES

IMR

The International Medical Research Co.
Lincoln Building
60 East 42nd Street
New York 17, N. Y.

why **torment** the soap·sensitive skin?

When soap causes, inflames or prolongs dermatitis and dermatoses... cleanse with **LOWILA.** Completely soapless, mild **LOWILA** leaves the "acid mantle" of the skin intact; works with, not against your therapy; helps remove crusts and scales gently.



LOWILA

- **soapless**
- **virtually non-irritant**
- **lathers well**
- **cleanses efficiently**

for skin cleansing
--- face, hands, bath
LOWILA cake

for household cleansing
--- laundry, dishes, etc.
LOWILA liquid

samples **on request**

WESTWOOD PHARMACEUTICALS

Division of Foster-Milburn Co.

Dept. D 468 Dewitt St., Buffalo 13, N. Y.